RAB
8

"THE LANCET"

REPORTS

OF THE

INTERNATIONAL CONGRESSES OF HYGIENE AND DEMOGRAPHY

HELD FROM 1876 TO 1889

BRUSSELS	GENEVA
PARIS	THE HAGUE
TURIN	VIENNA

PARIS

REPRINTS OF DESCRIPTIVE ARTICLES, ETC.

Presented to the Members of the London Congress of 1891,
by The Editors of THE LANCET

LONDON
PRINTED BY BALLANTYNE, HANSON AND CO.
TAVISTOCK STREET, W.C.
1891

10962

"THE LANCET"

REPORTS

OF THE

INTERNATIONAL CONGRESSES OF HYGIENE AND DEMOGRAPHY

HELD FROM 1876 TO 1889

BRUSSELS	GENEVA
PARIS	THE HAGUE
TURIN	VIENNA

PARIS

REPRINTS OF DESCRIPTIVE ARTICLES, ETC.

Presented to the Members of the London Congress of 1891
by The Editors of THE LANCET

LONDON
PRINTED BY BALLANTYNE, HANSON AND CO.
TAVISTOCK STREET, W.C.
1891

WELLCOME INSTITUTE LIBRARY
Coll. welMOmec
Call No. WA

PREFACE.

THE meeting in England of what is officially the seventh, but practically the eighth, International Congress of Hygiene and Demography is an event full of promise for the future. England, unfortunately, has so far taken only a small part in the international movements in favour of sanitary reform. From the very first, we have urged that we ought, on the contrary, to be in the van of this universal crusade against preventable disease. For this reason we have followed with assiduity all the Congresses that have been held on the Continent. With the one exception of the Turin Congress, we have had a special representative at each of these gatherings. Thus it is in the columns of the *Lancet* that will be found the fullest descriptions of the past Congresses. The persistent publicity we have given to this question, our reiterated complaints as to the indifference shown by English sanitary reformers towards the earnest endeavours of their continental colleagues, have at last borne fruit; and now the Congress, for the first time, meets in England. But it is essential that Englishmen, especially, should know something of what has been done by other nations in times gone by. We are also anxious that the sanitary reformers of the Continent should realise that, in any case, the *Lancet* has not ignored their excellent work. For these reasons it has occurred to us that a reprint of what we published at the time concerning each of the different Congresses would be of use.

This history of the past Congresses is necessarily incomplete. Our representative could not be present in all the Sections at one and the same time. Also it was only as the Congresses grew in importance and gathered in strength that more and more space was devoted to the accounts of what had been done. Nevertheless, the following articles, for the most part written on the spot and while the Congresses were progressing, will give some idea of what these

various meetings were like, and what were the problems with which they attempted to grapple.

The first Congress was held at Brussels in 1876. There was at that time an Exhibition in the Belgian capital of hygienic appliances, which our correspondent described at great length. The appropriateness of a discussion on hygiene naturally suggested itself, and, while the doors of the Exhibition were open sanitary reformers from different parts of the world were invited to join in the debates about to be organised. This was the first International Congress of Hygiene. There was no special reason to believe that its consequences would be of any very great importance till Dr. Lionville, representative of the French Government, conceived the idea that the Congress ought to meet again. He suggested that the Congress should assemble every two years, and, as in two years' time there was to be a Universal Exhibition in France, he invited all the members of the Brussels Congress to meet again in Paris. The Brussels Congress was much approved; that of Paris was a most brilliant success. So many nations were represented, the debates were so closely followed, the banquets and excursions proved so agreeable and instructive, that the International Congress of Hygiene from that date became an institution firmly established in Europe. Only once since the commencement in 1876 has the Congress been postponed, and that was when the cholera epidemic had so disturbed the different countries that it would have been difficult to secure a good attendance. Thus it was that, after meeting at the Hague in 1884, three years elapsed before the Congress again assembled.

The Congress did not lose anything by waiting. The Vienna Congress, of 1887, was the most numerously attended of any on record, and here it was that the English at last came forward to take their share in the good work, and invited the Congress to meet next time in London. But the two years' interval brought us to the date of 1889, when all the world was at Paris, where the greatest of all Exhibitions ever held attracted millions of visitors. To attempt, at such a time, to hold a Congress in any other town than Paris was to court certain failure. Also, as everything connected with hygiene would find a place at the Exhibition, the French sanitary reformers were anxious to hold a Congress of Hygiene at the same time. It was therefore decided at Vienna that the next official International Congress of Hygiene should be held in London in four years' time, but that at the usual date—namely, in two years—an unofficial Congress should meet in Paris. This Congress, though unofficial, was attended by officia

delegates from a great number of European Governments, was better organised than several of its predecessors, and proved in every way a great success.

Now the four years have elapsed, the series of official Congresses is resumed, and this time the sanitary reformers from all parts of the world come to our shores to study in England what there is good in English sanitation. We wish them a hearty welcome; and as an expression of our admiration for the work they have done in the past, we venture to offer to every delegate and member a copy of this pamphlet, recording the success of the former Congresses. Those who have not participated in any of these meetings will be able to form some idea of what has already been achieved; while others may refresh their memories and recall the pleasant days gone by. What, however, none can do is to understand fully the great value, the great practical good, that has resulted from these Congresses. It would be a mistake indeed to treat them lightly. Perhaps in England the International Congresses of Hygiene and Demography have so far produced little or no results. But on the Continent they have helped to mould the sanitary legislation of many States. The busy politician is glad to be guided by such important assemblies, consisting of men far more competent to decide what should be done for the preservation of public health than the average deputy or member of Parliament. Nor can we say how far, for instance, the Emperor William of Germany was influenced by the Vienna International Congress of Hygiene when he convoked the Berlin Labour Conference. Certain it is that this Conference has resulted in the adoption by several European nations of laws tending to realise the proposals advocated in the Section of the Vienna Congress devoted to the study of Industrial Hygiene.

It is only natural, and it is a self-indicated necessity, that those who are especially competent in matters relating to sanitary science should meet, and, by their discussions and decisions, lay down the principles that must guide the legislation of the future. We hope that the organisers of the Congresses will always bear this in mind. Their mission is so to prepare and conduct the discussions that they shall result in some practical proposal for the adoption of international measures and regulations calculated to protect the health of all countries. Sanitation, like almost every other great subject, is becoming more and more an international question; and there is no nation that has more extensive international relations than England. The continual improvement in the rapidity, cheapness, and facility of intercommunication among nations renders it more and more

impossible to remain indifferent when sanitary neglect produces disease, even if it be in a distant country. We can no longer say that we are not concerned with our neighbours' business. "The solidarity of Humanity" is certainly an established fact, so far as epidemic diseases are concerned. The germs of disease show no respect at all for frontier lines. It is because we have all along felt that the principles of hygiene must be applied, not by one nation, but by all nations, that, from the very first, we took the greatest possible interest in these International Congresses of sanitary reformers, and have throughout, consistently and persistently, urged that they deserved the fullest support of all who study the welfare of mankind.

We may even go a step further; and though it is not our habit to trespass upon the political arena, still there is one political question with which we will deal. We would point out that when men of great eminence, who exercise in their own countries much influence, meet periodically together to compare the results of their learning, and enjoy for some considerable time friendly and intimate association, it must tend to engender a sense of mutual respect, admiration, and affection. Does not this render wars less probable? have not the International Congresses of Hygiene this good political effect, that they strengthen the prospects of peace? We hope, therefore, that such men will continue to meet, that the international friendships already created will become more and more prolific and lasting. We hope also that, in this happy concourse of nations, England may henceforth take a prominent part. For this reason we earnestly desire that the greatest hospitality and the most cordial welcome shall be extended to all the members and delegates who, from so many different countries, have come to the London International Congress of Hygiene and Demography. By their labours may the sufferings of humanity be mitigated; by their mutual intercourse and friendship may the peace of the world be preserved.

CONTENTS.

	PAGE
BRUSSELS CONGRESS, 1876	1
PARIS CONGRESS, 1878	2
TURIN CONGRESS, 1880	6
GENEVA CONGRESS, 1882	8
THE HAGUE CONGRESS, 1884	19
VIENNA CONGRESS, 1887	27
PARIS CONGRESS, 1889	56

THE EARLIER CONGRESSES.

BRUSSELS, 1876; PARIS, 1878; TURIN, 1880.

BRUSSELS, 1876.

THE LANCET, Oct. 7, 1876.

READING the accounts of the Congress of Public Health and Safety at Brussels, and of its proceedings, it would almost appear as if we were about to enter upon a hygienic millennium. Petted by royalty, feasted and entertained in high places, and generally existing in a seventh heaven of self-adulation, the Congress presents a sort of apotheosis of hygiene. The painter's art will surely step in to perpetuate the scene, and we, on our side the Channel, may hope to see on some lofty ceiling, or wide spread of canvas, Mr. Chadwick, Captain Douglas Galton, Dr. Richardson, Dr. de Chaumont, Dr. Hardwicke, and others depicted amongst the gods, radiant in pigmentary glories, Hygeiopolis shining under the rays of a millennial sun in the background. The pleasing vision is confirmed by so much of the proceedings of the Congress as have as yet reached these shores. It would appear (unless, indeed, the abstracts of papers and discussions in the daily journals are curiously incomplete) as if by common consent the hygienists who have taken an active part in the public-health work of the Congress have ignored the present, and dealt with a remote past or imaginary future of their subject. At any rate the working hygienists of this country, the men who have of late been filling the columns of the daily papers with their troubles, the men who have to deal with the unsatisfied, even rudimentary health-wants of communities, must have felt how little helpful the Congress was to them in their work. Hospital hygiene has been discussed by it without any consciousness, apparently, of the exceedingly important light which has of late years been thrown upon the true relations of hospital administration, especially in regard to the management of surgical cases, to hospital construction—a subject which lies at the bottom of the question of so-called "hospitalism." Quarantine was considered as if it might be an abstract question without apparently the least reference to the very serious matters now pending with regard to it in relation to plague. The resumption of quarantine practices of the old type in

the Turkish dominions in the East during the past three years, under the alarm of plague, and the tacit support given to this resumption by the larger number of the great maritime Powers of Europe, might well have occupied the attention of the Congress. The disastrous results of the futile quarantine maintained as to plague this year in Mesopotamia upon the well-being of the population of the province, and upon its trade, fully deserved the consideration of the Congress. The important question of the regulation of emigration, judging from the illustrations given, seemed to touch little upon the necessities of the present moment. It would be as pertinent to cite the state of hospitals in John Howard's time as an example of the necessity for present hospital reformation as to cite the state of emigration from Ireland in 1847 as an example for present emigration reformation. Even in regard to house-hygiene sentiment appeared to preponderate in the discussions over practice. The Congress seemed more at home in dealing with the proposition that it is desirable that death, when it occurs, should be determined in some precise manner before it is assumed that the individual is withdrawn from the influence of hygienic measures. It was less at ease in dealing with the question of the least harmful ways of disposing of the dead. Let us hope that when the proceedings of the Congress come to be published in detail they will prove to be less Laputan than the reports in the general press would make them seem to be.

The following appointments were made by the English delegates :— President, Captain Douglas Galton. For the section of Hygiene— Presidents, Mr. Chadwick, C.B., and Dr. Richardson, F.R.S. ; Vice-Presidents, Mr. H. Collis and Dr. Hardwicke ; Secretaries, Messrs. Phene and Pearse. In another section Sir Harry Verney, Mr. Crookes, Surgeon-Major Porter, Mr. Cooke, and Major Burgess were Presidents and Vice-Presidents.

PARIS, 1878.

THE LANCET, Aug. 10, 1878.

ON Thursday last, the 1st instant, the opening of the International Congress of Hygiene was formally celebrated in one of the halls of the Palais du Trocadéro. Of the various interesting assemblies organised in Paris in connexion with the Exhibition, the present one bids fair to be the most important and successful. The highest credit is due to the gentlemen who, encouraged by the success of the first Congress of the kind held at Brussels two years ago, united their exertions and energies to institute a hygienic gathering worthy of this country and of the great occasion of the Exhibition.

Under the honorary presidency of M. Bouchardat, the Professor of Hygiene of the Paris Faculty, whose reputation in hygiene is world-wide, and the effective presidency of M. Gubler, the eminent Professor

of Therapeutics of the same school, several commissions were formed for the purpose of establishing the future Congress, and centralised their discussions and proceedings in one of the pavilions of what remains of the Palace of the Tuileries, where the morning sittings of the Congress are now held. Whilst these commissions were occupied in selecting the six major questions to be brought before the Congress, and in writing their reports thereupon, other members of the committee were busy in spreading the announcement of the Congress, and gathering adhesions far and near from the authorities and learned bodies of their own and foreign countries, as well as from all whom they knew were interested in matters of hygiene. Amongst these latter members it is only an act of justice to mention the names of Dr. Lionville, the sympathetic deputy of the French Chambers, and vice-professor of the Paris Faculty: M. Trélat, the renowned architect and engineer of the city of Paris; M. Lacassagne. the amiable and talented professor of the Val-de-Grace; M. Durant-Claye, and MM. Martin, Napias, Thevenot, and Dubuisson, the other secretaries, and who had acquired invaluable experience at the preceding Congress of Brussels. Thanks to the combined efforts of all concerned, the success of the present gathering is an exceptional and remarkable one. The names of more than a thousand adherents are inscribed on the lists. The Governments of almost all the European States have deputed delegates to represent them on this occasion. The chief sanitary institutes of various cities have done the same. Amongst the corporations, societies, and learned bodies who have delegates at the Congress I read the names of the Minister of War and the Senate of Belgium, the Municipalities of Turin and Buda Pesth, the *Lancet* of London, the Sanitary Institute of Great Britain, the Dutch Government, the Ministry of War and Home Office of Russia, the Society of Hygiene of Alsace-Lorraine, the Swedish Home Office, the Ministry of War of Roumania, &c. &c.

M. Teisseranc de Bort, the Minister of Agriculture and Commerce, whose indefatigable and personal exertions have been so influential in promoting the success of the Exhibition, and of the varions Congresses held in connection therewith, took the chair, and in a short but very able speech pointed out the great importance and extensive bearings of this meeting, and declared the Congress to be open. He was followed by Dr. Gubler, who after some words of compliment to the address of Lieutenant-General Renard, Minister of War of Belgium and President of the Brussels Congress of Hygiene in 1876, insisted upon the valuable conquests of modern hygiene in the prophylaxis of disease, and upon the social aspects of sanitary science. Dr. Lionville, the secretary-general, then read a remarkable report, summing up the various stages of formation of the Congress, and the programme of its forthcoming proceedings.

It was now the turn of some foreign orators. Professor Crocq, senator of Brussels, established a link between the Congress of Brussels and that of Paris, and drew an eloquent comparison

between the horrors of war and the beneficial work of hygiene. Dr. Lory Marsh, secretary to the Sanitary Institute of Great Britain, congratulated the Congress in the name of his Grace the Duke of Northumberland. Professor Pacchiotti, of Turin, in a speech full of wit and wisdom, expressed the feelings of sympathy and friendship which united Italy and France. He dwelt on the hygienic aspects of his own city of Turin, and hoped that, thanks to the wonderful power of spreading knowledge of the French people, the present gathering would lead to the association of all sections of hygiene. M. Lacassagne, the second secretary-general, concluded with a report, in which he appointed the various attributions of the boards, and gave a list of the French committees.

The proceedings of the day ended in the nomination of the various presidents and vice-presidents of the several nationalities at the Congress. It will be of interest to state the names of the officials nominated. For Great Britain: Presidents, Dr. Chadwick and Dr. John Faure Miller; Vice-Presidents, Dr. Lory Marsh and Dr. Drysdale. Germany: President, Dr. Gunther; Vice-Presidents, MM. Finkelnburg and Krauss. Roumania: President, Felix; Vice-Presidents, MM. Cuire and Polychromi. Russia: President, Baron Maydall; Vice-Presidents, Councillor Strohm and Dr. Rauchfuss. Belgium: President, Senator Crocq; Vice-Presidents, MM. Boeckstael and Kuboen. Sweden: President, Laderkolm; Vice-President, Dr. Lamm. United States: Vice-Presidents, MM. Jenkins and Richardson. Holland: President, Van de Loo; Vice-Presidents, MM. Jager and Van Overbeck de Meyer. Italy: President, Professor Pacchiotti; Vice-President, Prince Lancio di Broto. Egypt: President, Cobicci Pacha. Greece: Vice-President, Professor Bambas. Austria: President, Dr. Michaelis. Hungary: Vice-President, Dr. de Grosz. Spain: President, Velasco; Vice-President, Dr. Bansa. Japan: President, Masana Maeda.

The proceedings of the Congress have been arranged so as to occupy two sittings every day except on the three days which are devoted to excursions. The morning sittings are to take place at the Pavillon de Flore of the Tuileries. There will be three sections, each with a board; and in these sections papers from members will be read and debates carried on. The afternoon sittings are general ones. They are held in the Palais du Trocadéro, and will be occupied by the discussion of the six major questions appointed beforehand by the Congress.

These questions, following a sort of biological cycle, are the following:—1. Hygiene of new-born children; mortality of infants; means of diminishing it; nosocomial assistance, foundling asylums, &c. 2. On the contamination of water (by the products of industry and sewage, &c.). 3. On alimentary hygiene (means of stating the good quality of food for public consumption). 4. On the dwellings of the poor (houses and city dwellings for the working classes). 5. Professional hygiene (on the means of diminishing the inconveniences and risks attendant on the employment of certain materials in

industry, such as mercury, lead, arsenic, &c.). 6. Prophylaxis of contagious and infectious diseases.

Three days will be employed in excursions, which are all of a very interesting character, and all directly connected with the questions of hygiene selected for investigation. Thus one day will be devoted to a visit to the model hygienic school known by the name of the Ecole Monge, and to the new model hospital of Ménilmontant, wherein M. Michel Moring and the Assistance Publique have realised all the more modern suggestions of sanitary science. Tuesday will be employed in visiting the fields of Gennevilliers, near Paris, where the members will be able to study practical utilisation of sewage matter, and, afterwards, in making an underground excursion to the marvellous sewage arrangements of the city of Paris. On Thursday, the 8th, there will be a general excursion out of town, as M. Menier, the great manufacturer, has convened the Congress to see his *fabrics* of chocolate at Noisiel, together with the dwellings, the sanitary farm arrangements, the school, and church he has organised for his workmen. This will certainly be the most pleasant of all the excursions, as M. Menier has a yacht for conveying his guests up the Marne to his place, and has provided luncheon for the party. The members of the Congress will enjoy a little fresh air and country convivialities in the midst of their labours.

On Sunday last the public dinner came off at the Hôtel Continental. The large and sumptuous saloon of this new hotel was most elegantly ornamented for the occasion, and more than two hundred guests sat down to dinner. M. Gubler presided at the dinner, and inaugurated the series of toasts with a few words in his usual fluent and felicitous manner. He was followed by many other orators, who all expressed the warmest feelings of sympathy for France, and their best wishes for the success of the Congress. Amongst these I may mention Mr. Chadwick, who expressed his opinion that the criterion of a civilised society was the prolongation of human life, and that this highest desideratum of all could easily be attained. He concluded with some warm expressions of courtesy in regard to France, to which Dr. Gubler responded by saying that he was glad that such an authority had stated that France was the link amongst nations. Other able or witty speeches and toasts were given by Baron Maydall, MM. Lancia di Broto, Finkelnburg, Felix, Crocq, Thullier, Richardson, Polychromi, &c. But I fear I have already exceeded the space which can be given me for this first article, and reserve for my next letter an account of the proceedings and excursions of the Congress.

TURIN, 1880.

THE LANCET, Aug. 14, 1880.

THE programme of the International Congress of Hygiene at Turin is fixed as follows:—Monday, September 6th: Solemn inaugural meeting, in presence of King Humbert. Speeches will be made by Senator Ferraris, magistrate of the city; Dr. Fauvel, President of the French Committee; Baron Maydall, of St. Petersburg; Dr. Finkelnburg, of Berlin; Dr. J. G. Jagar, of Amsterdam; Dr. J. Felix, of Bucharest; and by other delegates on behalf of their respective countries. The report of the Executive Committee will then be read, after which they will proceed to the election of the members to form the commission empowered to draw up the regulations for the prize of 35,000 francs to be given in 1882 to the author of a useful book on "The Hygiene of Rural Populations," and the commission to examine the subjects of discussion presented *extra ordinem*. On Tuesday, 7th, Thursday, 9th, Friday, 10th, and Saturday, 11th, sittings of the sections in the morning, and general meetings in the afternoon. Wednesday, 8th, excursion. Thursday, 9th, meeting of the International Association on Drinking Water; communication by M. J. G. Jagar. Saturday, 11th, final meeting. Sunday, 12th, excursion to Milan, to witness an experiment in cremation.

THE LANCET, Nov. 20, 1880.

THE printed summary of the labours of this great gathering of sanitary reformers has reached us after some delay, and we recognise among the speakers and the representatives of the various European nationalities the same names that were familiar to us during the second International Congress, held at the Paris Exhibition in 1878. We may at once state that the fourth Congress will be held at Geneva in September 1882, and it is confidently anticipated that London will have the honour of entertaining the fifth Congress in 1884. At Turin, as at Paris, the number of English members present was very limited, while, on the other hand, the various continental nationalities were not only numerously represented, but several Governments sent official delegates; and his Majesty King Humbert presided in person at the first sitting of the Congress. Among the various resolutions adopted we note one in favour of a permanent international committee to study and prevent the spread of epidemics; another urging the appointment, in each State, of a Central Health Bureau with a special budget and functionaries independent of political fluctuations. The principle of compulsory vaccination and revaccination in all countries, and the construction of disinfecting ovens in all large centres, together with enforced purification by dry heat of all infected bedding and clothing, were unanimously proclaimed. Among the minor questions, we note a protest against the incomplete consumption of oxide of carbon by gaslights, and a resolution in favour of large type for school-books, which at present are too often printed

in a manner calculated to strain the eyesight of the children. A lateral light in schoolrooms was considered preferable to a skylight. Short hours of study were recommended, and it was urged that in each important educational establishment elementary principles of hygiene should be taught by a medical professor. The Congress also advocated the construction of barracks in the form of detached pavilions, and urged that soldiers should first join the ranks in April or October, instead of, as at present, in mid-winter. The examination for naval captains should comprise a far larger knowledge of naval sanitation. The Congress also urged that in publishing statistics relating to lying-in hospitals care should be taken to give the average duration of the sojourn of the patients in the establishments, otherwise it would be impossible to estimate their respective degree of salubrity. Such, in a few words, were the principal points discussed and opinions adopted by this concourse of sanitary reformers. The proposal to meet again at Geneva was hailed with enthusiasm, for most persons are glad of an excuse to visit Switzerland; and sanitary matters are understood better by the twenty-two legislative bodies of this small Federal Republic than by some among the neighbouring powerful and centralised kingdoms.

THE GENEVA, 1882,

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE LANCET, Sept. 16, 1882.

IT must at once be recognised that the Congress has been a great success. It numbered more than 400 members, and no less than twenty-four different nationalities were represented. There were members who came expressly to assist at the Congress from Algeria, Austria, Belgium, Brazil, Bulgaria, Basutoland, Denmark, England, Germany, Greece, Holland, Hungary, Italy, Mexico, Ontario (Canada), Portugal, Poland, Roumania, Servia, Switzerland, Spain, Sweden, Turkey, and the United States of America. Many of the principal Governments—France, Germany, Russia, Austria, Spain, Italy, &c.—sent official delegates; while many leading municipalities—Paris, Berlin, Frankfort, Seville, Madrid, Turin, La Haye, &c.—also appointed special representatives. The Board of Health of Ontario (Canada) was represented by Dr. C. W. Covernton, but not a single English town or administration sent a representative. We noticed that two gentlemen from the Local Government Board were present; but they came in their private, not their public, capacity. Under such circumstances it is not surprising that many complaints were uttered at the lack of friendly feeling on the part of the English nation. As the leaders in sanitary reform, we ought to take an active part in assisting this great effort on the part of European nations to spread and equalise sanitary reform. With such speakers as M. Pasteur and M. Paul Bert, it is impossible to say that even the wisest among us have nothing to learn; while, on the other hand, we have everything to gain by coming to an international understanding on sanitary matters. Thus Professor Brouardel, after a most able paper read in the third section, carried a resolution, subsequently confirmed by the general assembly, that at the next International Sanitary Congress the delegates from each nation should bring a summary of the laws affecting the adulteration of provisions, so that adulterated food, condemned in one country, should not be exported and sold with impunity in another. Our recent experiences with respect to preserved peas imported from France, and coloured with copper, points to the necessity of such international understanding. Dr. Brouardel insisted that falsifications were now carried out with the aid of enor-

mous capital and great chemical knowledge. The employment of salicylic acid to preserve beer, wine, milk, fish, vegetables, &c., was especially dangerous. It might be argued that the quantity used was insignificant; ten centigrammes in a litre were supposed to suffice to prevent wine from turning sour; but he had often found an entire gramme in the litre. The fact was that the same substance was manipulated by different people. Perhaps the wine-grower himself, feeling a little anxious about his wine, would add a little salicylic acid; then the wholesale merchant would, in his turn, interfere; and finally the retailer came with a third dose, each probably imagining that he alone had resorted to this dangerous expedient. Thus, when the bottle came to the unfortunate consumer it had been thrice dosed, and perhaps thrice over-dosed. The effect of this form of slow poisoning was most difficult to trace to its origin, unless some accident revealed the cause. Dr. Brouardel suggested, however, that by the analysis of urine the unconscious absorption of salicylic acid could in most cases be detected. The worst feature in the use of this acid for the preservation of food arose from the fact that there was no uniform rule as to the quantity which could be taken with impunity. A healthy child might take even five grammes in one day without any very serious consequence; whereas an adult invalid, especially if suffering from any renal complaint, would require eight days to eliminate such a dose. This was but one illustration of the dangers attending the unscrupulous use of scientific means to promote the interests of certain traders; and it was of little use checking the evil in one country if the suspicious articles could be sold with impunity on the other side of the frontier.

This is but one example of the style of discussions that prevailed, and of the practical advantages to be derived by a nation such as England, when represented at Congresses of this description. The discussions were divided into five separate sections, and the work and pleasures of the Congress lasted every day from nine in the morning till midnight, with barely time allowed for meals. We cannot now give a summary of the debates. We may, however, express in the name of the English members who were present our high appreciation of the cordial and most hospitable reception accorded by the organisers of the Congress and the Swiss Government. It was scarcely possible to believe that a nation so restricted in its area, so limited in its population, could have given its foreign guests so magnificent a welcome. The first night there were an official reception and concert in the vast saloons of the new theatre—one of the model theatres of Europe so far as ventilation is concerned. On Tuesday evening, Professor A. de Condolle, son of the renowned botanist, and himself a man of high scientific attainments, received the members of the Congress at his mansion, near Geneva. The vast gardens and their botanical treasures were brilliantly illuminated, while within the members of the Congress joined with the *élite* of Geneva society in the enjoyment of a bountiful supper. The following evening

there was a similar reception at the hydrotherapic establishment of Champel-sur-Arve, on the outskirts of Geneva. But of all days Thursday was the most enjoyable. The Swiss Government had provided the finest steamer of the lake, the *Mont Blanc*, and three hundred and fifty members of the Congress embarked at nine in the morning, following the southern coasts of the lake till we reached Evian-les Bains. Here a sumptuous lunch was provided by the directors of the establishment; and, after a few speeches and a stroll, the Congress once more went on board. But even at this moment business could not be altogether forgotten. In spite of the loud tones of the band which accompanied the expedition, and the general desire of the company to enjoy the unrivalled surrounding scenery, the Italian delegates insisted on holding a meeting in the principal cabin to discuss cremation. Fortunately, the speeches were short. The effects of the lunch and the joys of the holiday were scarcely in harmony with this gloomy subject. After visiting the extreme end of the lake, where the Rhone brings the mud of the mountains into the clear waters, and then stopping a moment to contemplate the historical castle of Chillon, we landed at Montreux, saluted by peals of artillery. At the Kursaal the theatre was converted into a banqueting-hall, the stage being occupied by local bands and glee societies, who played and sang alternately during the dinner and between the speeches, in which the members of the Swiss Government, the Federal Council, and the local administration took a prominent part. When the banquet was over it was already dark, and the members of the Congress were agreeably surprised to find the whole line of the coast illuminated in their honour. The steamer also was gaily bedecked with garlands of lamps of many colours, while on the still waters smaller craft flitted here and there, burning Bengal fire or carrying numerous lamps that reflected their colours on the transparent lake. The Congress once on board, the steamer put off a little distance from the pier, and then commenced a display of fireworks, starting simultaneously from the gardens of the hotels that line the shore, and from points high up in the mountains. Against the dark background of the black mountains, the Bengal fire enabled us clearly to discern the elegant hotels and villas poised some three thousand feet above us at Les Avants and at Glion. The church steeple of Montreux was brightly lit. Vevey and the surrounding villages joined in the festivities. For some two or three miles along the coast it was one blaze of light, and rocket after rocket shot up towards the sky; while the roar of the cannon, the stirring strains of the British national anthem (played by a powerful brass band), the cheers from the ship, and the shouts from the shores all helped to conclude a reception unsurpassed for its cordiality, and which will for ever remain deeply impressed in the memory of the guests. Nothing could have more conclusively proved the public spirit of the Swiss population, the interest they have taken in the work of the Congress, and the high honour they wished to confer on their distinguished visitors.

Another evening reception, concert, and supper, on the Friday, at the mansion of Mde. Eynard, and a farewell banquet on Saturday evening, concluded the festivities of the Congress; and certainly, whatever services the members may have rendered by their work during the week, they have been amply rewarded by the cordiality and unbroken harmony of the reception accorded to them. If sanitary science can always be propagated under such auspicious circumstances, it will certainly become the most popular of all sciences.

THE LANCET, Sept. 23, 1882.

AT the second sitting only was the real business of the International Congress of Hygiene begun. The first meeting was devoted to congratulatory addresses, in which it was curious to notice that the least important countries took the most active part. While the representatives of the Great Powers of Europe maintained an attitude of solemn reserve, Poles, Bulgarians, Brazilians, representatives from Algeria and similar countries, indulged in grandiloquent speeches, which might have conveyed the impression to an ignorant public that the spirit of sanitary reform had been imported into Western Europe from the Danubian Principalities and regions south of the equator.

The second meeting of the Congress was densely packed; in the galleries occupied by the general public there was scarcely standing room. The heat of course was intense; and the impartial critic must have discerned that if sanitary reformers are good speakers, they are, so far as the ventilation of the hall where they met is concerned, anything but good practitioners. Dr. H. C. Lombard, of Geneva, the President of the Congress, was in the chair, and when he called M. Pasteur to the platform, the applause assumed the character of an ovation. Discarding all attempts at oratorical effect, M. Pasteur took a seat at a little table, unfolded his manuscript, and read as quietly and simply as if he had been at his own fireside. Now and then he stopped in the lecture to explain some point, or else to abbreviate some passage which he thought too long. Yet if the speech was thus modestly delivered, it was not devoid of that refined eloquence that is the special charm of a cultivated Frenchman. To explain his presence, M. Pasteur commenced in the following words:—"The Directing Committee of this Congress, knowing that I was to spend the vacation in the Jura mountains, within a few hours of your beautiful city, was kind enough to invite me to read a paper on the Attenuation of Virus. I willingly acceded, happy to find a pretext which would enable me to become, for a little time, the guest of a people who had been the friends of France in its evil as in its prosperous days. I also cherished the hope of meeting those who have criticised my works during these last few years. If this Congress is a field for union and reconciliation, it is also the arena for courteous discussion. We are all animated by the highest aspiration—a passionate love of truth."

M. Pasteur then at once launched into the subject under discussion, recalling his works published in 1880 on Chicken Cholera, the cultivation of the specific germ, and the creation by this cultivation of a virus that could be used as a vaccine against the disease. This modification in the intensity of the germ poison could be obtained by simply exposing the microbe to the action of oxygen. This fact had also been proved as applicable to the microbe of charbon, by comparing the virulence of cultivated microbes exposed to the action of the air and those which, on the contrary, have been confined in a sealed tube. In the former case they perish entirely in the course of a few months, after passing through various phases of attenuation; while the latter, being protected from the action of oxygen, retain their virulence for several years. M. Pasteur's principal object was to demonstrate that, by utilising the action of air, we could establish a general method for the attenuation of virus. In the researches which have demonstrated these facts, M. Pasteur was greatly assisted by M. Chamberland, M. Roux, and more particularly by M. Thullier. It was in their name as well as his own that he spoke. M. Pasteur then related the case of a young child bitten by a mad dog, and who died of hydrophobia. Rabbits inoculated with the saliva taken from this child, four hours after death, died in thirty-six hours. This blood contained a special microbe that could be easily cultivated, and in each successive generation killed rabbits thus inoculated, and the same microbe was discovered in their blood. In one experiment it was shown that the appearance of the virulent organism took place nine hours after inoculation, and corresponded with the commencement of the fever. The saliva of dead rabbits will communicate the malady to other rabbits. Adult guinea-pigs can resist this inoculation, but young guinea-pigs are killed in two or three days, and by passing the poison through several young guinea-pigs it so increases in violence that it will ultimately kill adult animals of the same race; but, strange to say, if it is brought back again to rabbits, then it loses its poisonous force. M. Pasteur described this microbe at the Academy of Medicine on January 18, 1881.

The question arose, whether this microbe would always present itself in cases of hydrophobia; and as in February 1881 another child died from the bite of a mad dog, other inoculations were made with the saliva taken both before and after death. The rabbits died in three days, and the same microbe was discovered in their blood. Prolonged experiments with the saliva of rabies showed that death might result in three ways:—(1) By the new microbe; (2) from disorders of a purulent and septic character; (3) from true madness, which always requires a long period of incubation, and commences by paralysis of the limbs twenty-four to seventy-two hours previous to death. The tendency to bite is extremely rare among mad rabbits. Therefore M. Pasteur concludes that the saliva of persons dying of hydrophobia contains, apart from the specific virus of rabies, not yet characterised by a cultivatable microbe, a virus

formed by a special cultivatable microbe, and other and various microbes capable of occasioning death by the exaggerated production of pus, by excessive local disorders, and sometimes by the introduction into the blood of ordinary microbes. The new microbe discovered in the saliva of persons suffering from hydrophobia has subsequently been found in the saliva of persons who died from other diseases; it therefore accompanies, but has no special relation with, the virus of rabies. Nevertheless, this is the third virulent microbe which can be attenuated by the action of oxygen, and the history of this third microbe is as yet unpublished. M. Pasteur offered the Congress the first record of these new experiences. He found that the microbe of the saliva was governed by the same laws as those that influenced the virulence of the microbe of the cholera in chickens. M. Thullier had the patience to cultivate eighty generations of microbes found in the saliva of a patient who died of hydrophobia, and the eightieth generation was as virulent as the first. But if the successive cultures were submitted to the action of air, then the result is not similar to that obtained with the microbe of chicken cholera. The microbe from saliva dies very rapidly. Two or three days' exposure to air often suffices to render the microbe sterile. A culture coming from virulent blood will live from six to twelve days, but in each successive batch the duration of virulence is reduced. The eighth generation will not live longer than three or four days; the twenty-fifth, twenty-six hours; and the forty-eighth, twenty hours. These latter cultures, if inoculated in rabbits, will not always kill them, and the rabbit, having survived the mild inoculation, can then take the virulent poison with impunity. Yet the rapidity with which this microbe loses its virulence renders it very difficult to discover the moment when in its increasing vitality it would constitute a safe vaccine. To do this it is necessary to prolong the life of each crop. This great end can now be attained by employing a new vehicle. The microbes generally live best in veal broth; but by mixing two parts of this broth with one part of pure rabbit's blood, M. Pasteur finds that the life of microbes derived from saliva can be prolonged to forty or fifty years. By taking the microbes during the last ten days cultures of graduated virulence can be made, and thus a vaccine of various degrees of strength obtained. It is to the action of oxygen that we must again attribute the modified strength of these cultures. To the microbes mentioned—the microbe of chicken cholera, the microbe of charbon, the microbe of saliva, especially the saliva of rabies—M. Pasteur concluded by adding a fourth microbe that was discovered in the foam taken from the nostrils of the horses that died during the typhoid epidemic at Paris in 1881. By inoculation with this germ rabbits died of true typhoid. With infinite pains M. Pasteur succeeded, and still by the use of oxygen, in so cultivating and reducing the virus of the typhoid microbe, that he was at last able to vaccinate rabbits without killing them; but, on the contrary, when he subsequently inoculated them with the virulent poison, they did not feel its effects. Thus

M. Pasteur was able to declare, in conclusion, that we now undoubtedly possess a general method of attenuation. Its application need only be modified according to the exigencies of the physiological characteristics of the different microbes. The general principles have been found, and it is impossible to doubt that the future of these researches is rich with the promise of great results.

M. Pasteur then proceeded to refute some personal attacks made against him by Professor R. Koch and his pupils. This gave rise to a curious misunderstanding that, but for the dignified reserve of Dr. Koch himself, might have led to unpleasant consequences. The Germans, who were present in great numbers, misunderstood M. Pasteur's allusion to the *recueil allemand* as a taunt respecting the *orgueil allemand.* After such a misconception, Dr. Koch was perhaps justified in refusing to accept M. Pasteur's challenge, though he at once mounted the platform after the applause had subsided.

Dr. Koch, speaking in German, said he was disappointed with M. Pasteur's paper; the facts lacked novelty, and he could not see that they were especially connected with hygiene. In any case, he would answer all the points raised through the medium of the scientific press. Dr. Koch was especially anxious to avoid a discussion at present, for, as M. Pasteur could not speak German, and he could not express himself clearly in French, there was but little chance of coming to an understanding.

M. Pasteur thereupon protested that Dr. Koch could not have understood his paper, or he must have acknowledged the importance and fecundity of the facts disclosed.

The President here adroitly interposed, suggesting that a diversity of opinion between men so prominent in science could but prove of benefit to mankind by stimulating the researches of each party.

Dr. Sormani, of Pavia, then related how in Italy it had been found that the vaccine for charbon was only effective when it produced sufficient disturbance to raise the temperature of the animal vaccinated to 40° C.

Dr. Marestresi, of Genoa, doubted whether the microbe was the cause of illness. The microbe of typhoid, for instance, was not found at the commencement of the illness. Just as the sea was not made by the fish, but for the fish, so did the microbe live in diseased blood because it suited its mode of life, and not because it had created the disease.

M. Pasteur, in answer to the suggestion that his researches were not connected with hygiene, urged that, as their object was the prevention of disease, they, on the contrary, harmonised with the highest aims of sanitary reform. Already some practical results have been attained, for there have been no less than 400,000 sheep vaccinated and 40,000 bullocks, and the deaths from charbon have been reduced to 1 in 300 among the sheep and 1 in 2000 among the bullocks. There have been, it was true, unfavourable results in

Italy, but this was due to mismanagement; the vaccine had been kept too long in a hot climate, and was charged, not merely with the microbe of charbon, but with many septic germs.

At the conclusion of a most enthusiastic meeting, M. Pasteur was warmly felicitated on all sides.

THE LANCET, Sept. 30, 1882.

As in the five sections no less than fifty-one questions had to be discussed, we are compelled to abandon the hope of giving even the briefest account of each of these interesting debates. Of the general meetings we have already given some account. They were not altogether satisfactory. The afternoon, devoted to Professor A. Corradi's paper on the Contagion of Phthisis, failed to elicit anything new. Various suggestions, however, were made. Dr. E. Vallin, for instance, though inclined to believe in the contagious nature of the disease, remarked that the fact that animals inoculated with the bacillus of phthisis contracted the disease did not absolutely prove the susceptibility of man to this germ. Guinea-pigs would die of phthisis if shut up in the same room as a man suffering from this disease, without there being any inoculation. In any case, while on the Continent zymotic patients could not be isolated, it was much too soon to speak of the isolation of tuberculosis. Indeed, throughout the discussion it was clear that grave doubts still existed as to the contagious nature of phthisis, and a strong feeling was manifest against isolation. The depressing effect of isolation hospitals would act almost as a sentence of death upon the patients, according to Dr. E. Landowski's experience. Dr. Lubesski, delegate of the Warsaw medical school, thought that the clothes and beds were the most likely source of infection, and suggested researches as to the special character of the perspiration coming from phthisical patients. Another speaker inquired whether it would not be well to study the effect of sewer-gas and sewage on the vitality of the bacillus; as the prevalence of phthisis was more marked in districts where the drainage was bad, and general hygiene neglected. Dr. Leudet, of Rouen, gave the result of twenty-eight years' study of fifty-six families with whom he was intimately acquainted. In fifteen cases the husband, and in forty-one cases the wife, died of tuberculosis. Of the fifteen widows, five ultimately showed symptoms of tuberculosis. This might encourage the belief in contagion, but one of the women had a rachitic deviation, another lost her aunt, and the third her sister from the same disease. Of the forty-one widowers, only three died of phthisis. Therefore, Dr. Leudet concludes that if marriage is a cause of contagion, the contagion is more frequent from the husband to the wife than from the wife to the husband.

After this discussion, Dr. Varrentrapp, medical officer of health for Frankfort, gave a very interesting account of the school colonies

organised in Germany for the purpose of sending the weak and poor children of large towns for four to six weeks to the country during the holidays. Guetlet's comparative tables are used to record the weights and measurement of the children at their departure and their return from these expeditions. The improvement was found to be on an average 1 kilo. 300 grms. for the boys, and 1 kilo. 480 grms. for the girls, and the average growth two centimetres. The remarkable point was that the good impulse given by this sojourn in the country continued after the return to town. The children also acquired habits of cleanliness and discipline, and the cause of education derived great benefits from this system. In Denmark it was the custom to send two or three children to board with an agriculturist, who took them for nothing in exchange for their labour. The railway and steam companies gave these children free passage, and thus 7000 children were able to escape for a little while the injurious effects of overcrowded towns. At Berne the school teachers were in the habit of taking thirty to forty children to the country, when special contracts were made with purveyors, and the authorities provided gratuitous conveyance. The Pastor Zillon, of Zürich, first started this idea, and now in twenty-two towns of Germany regular holiday colonies have been organised. Milan was the only other town that had followed the German method in the organising of these holiday colonies. The next general discussion related to the effect of altitudes on the health of patients, &c., when Dr. Paul Bert delivered the remarkable speech already mentioned in these columns. To his experiments on mountain sickness we should now, however, add his peroration, rich in speculative thought. Dr. Paul Bert having shown that the blood of animals living in low countries absorbs from 10 to 12 per cent. its weight of oxygen, whereas the blood of the same animals acclimatised at La Paz, some 12,000 feet above the level of the sea, absorbed from 18 to 20 per cent. its weight of oxygen, concluded with these words:—"Thus, therefore, when men or animals resort to high altitudes they become acclimatised in the course of a few generations. Their blood, being enriched by a larger proportion of hæmoglobin, is capable of absorbing a much greater quantity of oxygen. Such results are most consoling for the future of human races. You are all aware that astronomers menace us with annihilation, which, though in the far future, is none the less certain. They tell us that the central fire will gradually go out, that the air which surrounds us will ultimately reach the profoundest depth of the globe, and, the atmospheric pressure slowly diminishing, the moment will come when it will no longer suffice to maintain life. I do not wish to challenge these pessimist predictions; but their gravity is singularly attenuated by the considerations I have brought to your notice. What has happened to save the inhabitants of the Cordilleras will save our descendants. As the barometric pressure decreases their blood will alter in character, to harmonise with the surrounding atmosphere. The facility for absorbing the oxygen of the air will augment, and life will continue to be possible long after the epoch when, according

to calculations based on our present condition, the human race is doomed to die."

Dr. W. Marcet, F.R.S., also gave a very interesting account of his scientific experiences while mountaineering. He thought that cold and the rapidity of the ascension had a far larger share than is generally supposed in producing "mountain sickness," and had noticed that the southern or warmer side of a mountain was never so painful to climb. As a means of procuring oxygen, so necessary to combat the effect of high altitudes, he suggested chlorate of potash, for it was easy to carry, and liberates oxygen when in contact with the heat of the mouth. Cold corresponded with the lack of oxygen, and by careful experiments he found that his breath contained 19 per cent. less carbonic acid on the summit of a high mountain than at Geneva. With his assistant the difference had been greater—namely, 21·8 per cent. Dr. Marcet concluded, like all the other speakers, with the opinion that medium altitudes had a tendency to check phthisis.

At the final general meeting of the Congress a paper was read by Dr. Haltenhoff, of Geneva, on the Prevention of Blindness. Though statistics were not complete, particularly those of countries where blindness was most prevalent, such as Russia, Algeria, Turkey, and Egypt, yet they might calculate that there was at least one blind person out of every thousand of the European population. This gave us about 330,000 blind persons in Europe, and the larger half of these cases might have been prevented. Fortunately, an English philanthropic society had taken the matter in hand, one of its principal means of action being the distribution of short popular pamphlets full of practical, intelligible suggestions. Dr. M. Roth, the secretary of the Society for the Prevention of Blindness, had known how to rally the French hygienists to his cause, and at the Turin Congress it was resolved to make this a subject of discussion at Geneva. In the meanwhile, the English society had decided to offer £80 for the best work, written in English, German, French, or Italian, on the subject. The speeches that followed, and notably an able oration from Dr. Roth, in which he calculated that the blind of Europe cost society 100,000,000 fr. to maintain, all went to prove that neglect in childhood and at the first outbreak of disease was the cause of the far greater number of cases of total blindness.

At the termination of this discussion, Dr. A. J. Martin, general secretary of the Paris Société de Médecine Publique, read the official report he had been requested to prepare on the Sanitary Exhibition, remarking that the Swiss law on patents had kept many exhibitors away. The report naturally partook of the general enthusiasm which prevailed throughout the Congress, but it was ably written, and Dr. Martin did venture to attack, at least, one or two faulty exhibits. This document has already been published *in extenso* in the Swiss and French papers.

There now only remained to decide where the next Congress should meet; and, in response to an invitation transmitted by Dr.

Van Overbeek de Meijer, it was unanimously resolved that the fifth International Congress of Hygiene should be held at La Haye in 1884. Dr. Van Overbeek de Meijer will be one of the principal organisers of the forthcoming Congress, and communications on the subject can now be addressed to him at the University of Utrecht.

Perhaps one of the most stirring incidents of the last sitting was the speech delivered by Dr. P. Bœner, of Berlin, which, as it contains an invitation that some of our readers may feel disposed to accept, we will translate:—"A fatal destiny destroyed our sanitary exhibition on the 12th of May, just as everything was ready. The objects were all in their places, the catalogues printed; we were only waiting for the public. In one hour, as you are aware, all this labour was annihilated. But we have not lost heart; and our courage was revived by the cordial sympathy we received from all sides. Our misfortune was due to employment of wood for the building of the exhibition. Now, however, I have the joy of announcing that a new edifice has already been raised on the ashes of its predecessor, and that this time it is built of glass and iron, filled with new exhibits, some of which had not been sent on the previous occasion; and it is with a feeling of no small satisfaction that I have the honour of presenting to the Congress the programme of the new and resuscitated exhibition." At this moment the members of the Congress, anxious to manifest their sympathies, gave vent to the warmest cheers and applause. The speaker, visibly moved, continued:—"Our exhibition, from purely practical motives, is not called international; but we will receive with gratitude anything of interest from whatever country it may come. In visiting Berlin, you will find something more than this exhibition of hygiene, which by its very nature is as international as humanity. By the side of the material interest in the exhibits, the sanitary works of the capital, you will meet a cordial, hospitable, and warm welcome." After a fresh outburst of cheers, and on the proposition of the President, the Congress passed a resolution expressing sympathy for the past and encouragement for the future. In this matter the French members of the Congress manifested a cordiality which showed how much devotion to a noble science can help to mitigate political and national antagonism.

THE HAGUE, 1884,

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE LANCET, Aug. 23, 1884.

ON the 14th inst. the fifth international gathering of sanitary reformers was opened at the Binnenhof, or First Chamber of the States General of Holland. Our correspondent will send us from the Hague some details of the proceedings, but we have already received the summary of the various reports which are presented as the basis of discussion. Thus, for instance, Dr. Corradi, of Pavia, will seek to demonstrate that we may admit the possible contagion of phthisis, but that transmission by clothes, rags, &c., is not yet proved. Cohabitation is the most likely, if not the only, means of contagion. Dr. Vallin, of Paris, has a report on the spread of tuberculosis by infected meat and milk, which he considers may occur unless the cause of infection is destroyed by exposure to great heat in cooking. Dr. Napias, as usual, appears as the champion of the working classes, claiming better legal protection for them against unwholesome industries and unhealthy dwellings. A great number of papers will be read by Dutch medical authorities on Over-pressure in Education, the Influence of Life Insurances on Infant Mortality, the Effect on Climate produced by the Destruction of Forests, and other topics. As yet no mention is made of Cholera, but it will be found almost impossible to exclude this "burning question" from the debates, and naturally the drainage of towns, notably Paris, will receive a large share of attention. The Congress will close its proceedings on Wednesday, the 27th inst. For Sunday next the Rhine Railway Company has placed a special train at the disposal of the members of the Congress, to take them to Rotterdam, Feyenoord, Dordrecht, and Moerdijk. There are entertainments for every evening, and the town of the Hague gives a reception to the members of the Congress at the Palace of the Arts and Sciences. Altogether, the Dutch will not fail to prove themselves worthy of their high reputation for hospitality.

THE LANCET, Aug. 30, 1884.

FAVOURED by the most exceptional and splendid weather, the Sanitary Congress met under favourable auspices, though the recent death of the Prince of Orange necessarily threw a certain chill on the proceedings. All who spoke in the name of Holland had to deplore this national loss. Nor was this all. Death and disease had been active in the ranks of the organisers of the Congress. Sir G. J. G. Klerck, formerly a member of the Dutch Government, who had promised to act as president, died last January, and two of the vice-presidents were afflicted with severe illness. There are not so many members as at Geneva two years ago, though I have counted 212, including undoubtedly the most eminent sanitary authorities of France and Holland, and many distinguished reformers from twenty-one different nationalities. Many Governments, municipalities, and learned societies have sent their delegates. But, as usual, England is more feebly represented than any other nation. We have, it is true, Dr. Corfield with us, and he is a host in himself, but, in spite of distance, there are a greater number of members present from the United States than from England. Yet as England is the most prominent among European nations in carrying out practically the laws of hygiene, it should not only be represented by a powerful delegation, but the Congress should have been held in London, and during the Health Exhibition.

The proceedings commenced on Thursday afternoon, the 21st inst., the Congress being opened by its President, Dr. de Beaufort, Senator. His speech was simple and cordial: he apologised for the absence of illuminations, for the quiet character of the reception, on account of the national mourning. But he not only promised a sympathetic reception, he declared that the Dutch people would not fail to take an intelligent interest in the proceedings of the Congress. (The Dutch newspapers have given full accounts of the debates.) Dr. de Beaufort was very sanguine as to the adoption by Legislature of the discoveries of science, and thought that those pessimists who described this as an age of decadence were altogether in the wrong. When we saw doctors devoting themselves, heart and soul, to the development of those sanitary measures which were best calculated to reduce the number of their patients, we could not doubt the disinterested nature of their sentiments. Then there were those heroic scientific expeditions to the borders of the Ganges, and other places where epidemics were raging, that will not fail to elicit the admiration of future generations. In spite, however, of all these efforts, the cholera had invaded France; but union and mutual consultation would strengthen action, and the Congress might be described as a council of war held to combat the cholera. The members would meet in the ancient hall where the Dutch Senate held its sittings. On the roof, painted in the sixteenth century, when the Dutch Republic was in the zenith of its prosperity, we might see the civilised world gathered together to render homage to the greatness of Holland. This painting might

serve as an emblem for the Congress, which had brought together representatives from all parts of the world to render homage to the great cause of humanity, the preservation of public health.

The general secretary, Dr. Van Overbeek de Meijer, who has had all the hard work and drudgery incident to the organisation of the Congress, then spoke and showed the difficulties that had to be overcome. The outbreak of cholera rendered the holding of the Congress a questionable matter; but with the approval of the French sanitary societies it was ultimately decided that a great international movement could not be checked by an epidemic in a mere corner of Europe. He denounced internal quarantines as vexatious and useless. After rendering homage to the doctors who bravely fought the epidemic and sought to check its development, he quoted the motto of the Prince of Orange, "*Je maintiendrai*," and of Holland, "Union is Strength." The Congress would also seek its strength in union, and against ignorance would maintain and propagate the knowledge and teachings of hygiene.

Dr. Carradi, of Pavia, recalled how Holland and Italy had been in the vanguard of civilisation, especially in respect to the medical sciences; and Dr. Caro, in the name of the Spanish Government, also returned thanks.

The real business of the Congress began on the morrow, when all the five sections met. It would, however, be impossible to describe even briefly the proceedings of all these groups. Each section meets five times, and for two hours, so that this represents twenty hours of close debate, not to mention the lectures delivered each afternoon. In the evening of the first day, a brilliant reception was given to the members of the Congress by the municipality of Amsterdam at the Palace of the Arts and Sciences. The Burgomaster delivered a speech of welcome, and one of the best military bands discoursed sweet music. On the Friday there was an open-air concert in the Zoological Gardens of the town and a soirée at one of the hotels, while on Saturday another concert was held at the pavilion of the literary club, in a celebrated wood which is one of the attractions of the Hague. But the Sunday's excursion to Rotterdam, Feyenoord, Dordrecht, and Moerdijk was undoubtedly the most pleasurable event. The greater part of the day was spent on a steamer in contemplation of the dykes, the towns, and the marvellous industry of the Dutch people. The remaining three nights of the Congress are to be devoted to receptions and manifestations of hospitable welcome. In spite of all this, much serious work has been done, and a fierce battle is now being waged on the question of quarantines. As a final result has not yet been attained, it will be necessary to postpone the analysis of the proceedings, for they will not be without influence on the various continental Governments who have sent special delegates to the Hague.

THE LANCET, Sept. 6, 1884.

THE cholera epidemic has been the cause of some soreness among the members of the Congress. It can scarcely be said that it has been debated as an abstract question. It seemed rather as if there were certain nations and men who had been impeached, and were therefore called upon to make good their case against all. Undoubtedly there is a political reason which prompts certain Frenchmen to infer that but for English interference in Egypt the cholera would not have been imported into Europe. Of course, it is objected to this that we are equally interested, commercially, if not politically, in seeking to prove that quarantines are of no use. But an international Congress of scientific men should not allow itself to be influenced by rival commercial and political interests. It should only seek to unravel the truth, whatever the consequences may be. Perhaps, however, the animosity was increased by the manner in which the case was presented. Dr. Dutrieux Bey, of Alexandria, who, by the way, is not an Egyptian, but a Belgian doctor, thought to make his position as the opponent of quarantines all the stronger by attempting to prove that cholera broke out spontaneously, and was not imported. This was a most unfortunate manœuvre, for it put the real question at issue into the background, and deprived Dr. Dutrieux Bey of all support. The members were afraid to vote against quarantines, as they might be thus supposed to deny the Asiatic and transmissible character of cholera. In spite of the obvious danger of creating this confusion, Dr. Dutrieux Bey commenced his speech by explaining that he had personally examined the valley of the Nile, and there found many cases of cholera (notably on April 4th), showing that this disease had prevailed to a considerable extent before its presence was generally admitted. The sanitary condition of the Nile provinces had so deteriorated that he thought cholera had become indigenous to the soil. According to Collin and numerous authorities, the plague had a preliminary stage of a mild and endemic description; then, after sundry premonitory symptoms, showing the gradual development of receptivity, it broke out in its violent and epidemical form. The same might be said of cholera. Examining the death returns and the hospital papers of Toulon, he had found one death from cholera on January 17th, and at Marseilles there had been cases of cholera ten days before the arrival of the suspected ship. The distinction established between Asiatic cholera and cholera nostras was but an arbitrary and artificial device. The importation of cholera had become a dogma, and, like all dogmas, was blindly and obstinately defended. But cholera was not particularly contagious; it was less contagious than diarrhœa. As in all ports there were always arrivals from doubtful districts, it was easy enough to find a culprit; but to prove the importation it did not suffice to show that a death had occurred; it was necessary to demonstrate that previously the country was absolutely free. Unfortunately, we always watched the entrance-door instead of looking

inside. Thus, while Europe was busy establishing quarantines on the Suez Canal, nothing was done to remedy the internal condition of Egypt, and the result was an epidemic which swept away about 100,000 out of a population of less than 5,000,000. However limited the possibility of transmission, measures must be taken. But could it be said that quarantines were really useful? In 1852 cholera began at Cologne without any trace of importation. In Russia cholera was said to have been imported by a land route in 1832 and 1848, while it was supposed to have come by sea in 1865, and broke out spontaneously at other periods. As a matter of fact, cholera was endemic in Russia. Dr. Dutrieux Bey then quoted a number of instances where ships had brought cholera patients and yet no epidemic ensued, nor had the railways in India facilitated the spread of the disease. Quarantines were useless, as they were only established after the germs had been introduced, and should be replaced by sanitary inspection and rigorous disinfection. This was the policy that had been successfully carried out by Norway, Sweden, and Denmark. But for the fear of quarantine, captains of ships would not conceal cases of illness, and the public authorities would not be tempted by a false sense of security to neglect the real methods of fighting epidemics.

Dr. Proust, in reply, urged that the International Epidemical Conference, held at Vienna in 1874, was unanimous on the necessity of maintaining quarantines against Asia, and was only divided in opinion as to the possibility of establishing quarantines between the different countries of Europe. At great length he proceeded to prove that undoubtedly cholera had been imported, notably after pilgrimages to Mecca. Quoting the report of M. Mayé, who had been sent by the French Government to Egypt, Dr. Proust remarked that the sanitary condition of Damietta was not more unfavourable than usual when the cholera broke out. Even Dr. Hunter could not recognise the spontaneity of the outbreak; though, to please his Government, he was forced to say it was "a resuscitation." He then accused Dr. Dutrieux Bey of not having spent sufficient time at the hospitals studying the papers, and maintained that, far from Toulon and Marseilles being prepared for the cholera, it so happened that the health of these towns was exceptionally good at the moment of the outbreak, and there was a remarkable absence of diarrhœa or cholera nostras.

Dr. Dutrieux Bey at once replied that he denied the competence of M. Mayé, who had only spent a few hours at Massourah, and had not visited the Delta. Why did they not reveal the names of those convenient stokers who brought the cholera? And who was there who could satisfactorily explain the difference between Asiatic cholera and cholera nostras? The Vienna Conference had failed to show the efficacy of quarantines, nor could it venture to say that cholera was not endemic in Russia, or to put aside the objection that the Caspian Sea was a Russian lake which Europe could neither watch

nor control. Why, then, when cholera might cross unchecked the broad frontier line of Russia, was so violent an attack made upon the Suez Canal?

Dr. Brouardel thought there were some points of common agreement. He was quite willing to suppress the term cholera nostras; but a cholera does exist which does not spread; it lives and dies in one place. Another form of cholera is transmissible. So long as cholera was limited to its birthplace nothing much was said about it; but if, on June 21st, the alarm was given, it was not because there were cases of cholera at Toulon, but because the cholera had spread from village to village in the South of France. The post-mortem examinations which Dr. Brouardel had made last year at the Paris Morgue revealed no less than six cases of cholera. Yet this was of little importance, and the thirteen deaths at Toulon in one day would have been treated in the same light but for the fact that it then became clear the disease was of the second and transmissible type. It appears, however, that the Mayor of Toulon explained to Dr. Brouardel that there were in reality only four deaths from cholera on that memorable day, the mayor having falsely registered all deaths from diarrhœa as cholera, so as to terrorise the population and clear the town. No doctor at Toulon accused the *Sarthe* of importing the disease, and if quarantines were badly managed, they might be improved instead of abolished.

Dr. Zoëros Bey, the representative of the Ottoman Government, then spoke with much animation in favour of quarantines. The Crimean epidemic had been imported. In 1865 another epidemic was introduced by a ship belonging to the State, and resulted in the death of about 30,000 of the Sultan's subjects. On the other hand, in 1860 an individual having brought the cholera to a small village on the Bosphorus, a cordon was established round the village and the epidemic did not spread. Later on several cases occurred in a hospital through the use of a room where cholera patients had been treated during the previous epidemic; by placing the patients under canvas and isolating them no further harm occurred.

Dr. Proust now spoke once more. Together with his fellow-delegates from the French Government, he had questioned thirty-five doctors at Toulon and more than 200 at Marseilles; why should the opinion of one doctor from Egypt be accepted against them? Was this one solitary voice to upset the system Europe had instituted to protect itself against epidemics?

These remarks elicited a reply from Dr. Dutrieux Bey, and he insisted that no importation had been proved before the existence of receptivity. As for the evidence of the doctors mentioned by Dr. Proust, he wished to know on what basis inquiries should be conducted—verbal assertions or death certificates?

Dr. Rochard spoke once or twice on the French side.

Finally, Dr. Crocq, of Brussels, sought to discuss the matter in a calmer tone. "Is cholera transmissible? Yes, it is; but," he added, "receptivity is not yet sufficiently well known to base a

system on it. Cholera, though contagious, miscarries in certain cases. In some towns it kills ten persons, in others thousands. Sometimes there are but one or two cases, sometimes 10 per cent. of the population is swept away. This difference has not been sufficiently studied. But as the disease is transmissible, we must adopt quarantines. At the same time we shall avoid exaggerations. The best things perish by exaggeration. Land quarantines are impossible. They may spread the contagion, but can never prevent it. In certain circumstances they might, however, be applied. Notably in the steppes of Russia, where surveillance is easy and in those cases useful." The same might be said of certain parts of Asia or Africa; places, for instance, where there is but one road. This proved that he was in favour of quarantines in seaports, but on condition that they were applied reasonably, and not in a vexatious manner. The germ being principally transmitted by intestinal evacuations and in soiled linen, it was not so difficult to stamp out the cause of epidemics.

The section numbered fifty-one members, and the greater part rose to vote against Dr. Dutrieux Bey, while the one solitary Englishman present voted for him. He, however, explained that his vote was given as a protest against quarantines, and not as indorsing Dr. Dutrieux Bey's views on the etiology of cholera. Dr. Dutrieux Bey was not, however, to be beaten. Every ensuing morning he sought to reintroduce the question; and, as in the interval Dr. Corfield, Dr. Sweeting, and other medical men arrived from London, there was every reason to anticipate that a better fight could be made. The majority, however, clamoured that they had had enough of the question; and, as Dr. Raymondaud was to read a paper on the Organisation of a Universal Society against Epidemics, it was decided that the question of quarantines should be taken up again in discussing Dr. Raymondaud's proposals. This paper was, however, not read till the end of the last sitting but one. The principal suggestion was the union of all sanitary societies and authorities to raise funds and form a limited liability company for the drainage of the Ganges valley, and thus attack the cholera at its basis.

The following morning the section gathered in force. Dr. Dutrieux Bey opened the debate by reading a short paper. The Congress had decided that quarantines ought to be improved, but had not said how such improvement should be attempted. In theory, quarantines were to be applied at the first case of Asiatic cholera and maintained till after the last case. In practice, however, this was rarely, if ever, done. It is impossible to ascertain the first or the last case, and quarantines are established too late and abolished too soon to be of any real service. Also the regulations and restrictions are constantly defied. Consequently, Dr. Dutrieux Bey moved:—First, that in fixing the duration of quarantines the time allotted should be based on the time required to submit the ship to a rigorous sanitary and medical inspection and disinfection; and, further, to prevent any misunderstanding, it would be advisable to

substitute the words "sanitary control" for the word "quarantine." Secondly, that it is desirable to modify as promptly as possible the quarantines actually established in the Mediterranean ports, so that their duration may be limited to the time necessary to carry out a thorough medical and sanitary inspection and disinfection.

The moment this resolution had been read out, Dr. Zoëros Bey excitedly protested that the Ottoman Government would never adopt such a measure, as Constantinople had been saved year after year by quarantines. Amid much clamouring, Dr. Corfield commenced a carefully prepared speech, by remarking that formerly all Englishmen were in favour of quarantines, but that now opinion was as unanimous in the contrary direction. At this point, Dr. Rochard rose and, together with other French doctors, loudly objected to Dr. Corfield's being heard. The question had been decided, and they would not allow it to be revived. An Englishman then protested that the previous vote was complicated with the question of the character of cholera; that a vote on the simple question of quarantines had not been taken, and that, as England was the country which was most attacked, it was only fair to hear the distinguished Professor of Hygiene, who had prepared a defence of the English policy. Dr. Rochard, however, protested that there was no desire to attack any nation; the name of England had never been mentioned, so Dr. Corfield need not trouble himself to defend his country. This, of course, was a mere play of words; for, though the name of England had not been mentioned, there could be no doubt that we are accused of interfering with quarantines in the Red Sea, and of allowing commercial interests to take precedence over the interests of the health of Europe. Nevertheless, Dr. Corfield was not heard, and the only concession made was to allow Dr. Dutrieux Bey's resolution to be put to the vote without any discussion. In spite of this disadvantage, twelve members stood up for the resolution, and only twenty to twenty-four against it. There must have been more than fifteen abstentions. This result caused much surprise, and was considered a moral triumph for the minority. Of the twelve voters against quarantines, three were English, and the remainder for the most part Dutch and Swiss.

THE VIENNA, 1887,

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE LANCET, July 30, 1887.

EVERY State, European and Transatlantic, will be represented at this great hygienic gathering. The Organising Committee have already enrolled the names of 960 members and the "four figures" will be reached, it is confidently expected, before their books are closed. Local committees have been at work in every province of the Austro-Hungarian Empire, and Prague, Salzburg, Laibach, Czernowitz, and Lemberg, with Wiener-Neustadt and Kakonitz, have each contributed to the effective force of the Congress. The Medical Faculty of Vienna, with the various professional societies of the capital, are unwearied in their exertions for the convenience and entertainment of their coming guests, all working together with the determination to make the meeting, not only more numerous, but also more successful than its predecessors. We announced last week that, to the great regret of the central bureau, Ministerialrath, Dr. Franz Ritter von Schneider, had resigned his post of president, and that Professor Ludwig, Dean of the Faculty of Medicine, had been unanimously elected in his room. Failing health was Dr. von Schneider's reason for declining the laborious duty; but the committee have succeeded in so far inducing him to accept office that he will take part in the proceedings as honorary president. A highly distinguished name will thus be secured for the official staff, and it is possible that the discussions may not altogether be deprived of the presence and participation of certainly one of the most accomplished of contemporary hygienists. As we write, we learn that subtropical hygiene will be represented at the Congress by Dr. Pedro à Pardo, the delegate of the Argentine Republic. Dr. Pardo, for many years the head of the Health Department in the Buenos Ayres Government, and Dean of the Medical Faculty in its University, brings with him high credentials for the effective discharge of his mission.

THE LANCET, Aug. 27, 1887.

VIENNA, famous historically as a seat of Congress, will four weeks hence give hospitality to the greatest numerically as well as philanthropically that has yet assembled within her walls. To the invitations issued by the Organising Committee of the International Congress of Hygiene 1320 affirmative replies have been received. The ordinary members will be numerous enough to suggest the thought that the gathering is as much an ethnographic as a hygienic one. Austria contributes 788, Hungary 182, Germany 85, France 63, Belgium and Italy 24 each, Russia 19, Switzerland 13, England 12, Holland 9, Denmark 8, Roumania 5, North America 5, Spain and Egypt 3 each, South America 2, and Portugal, Bulgaria, and Turkey 1 each. The official representation is also considerable. The common Ministries of Vienna and Buda-Pesth depute 15 delegates; the Austrian Government 12, the Hungarian 18, the French 10, the Belgian and Swiss 4 each; the German kingdom, the Bavarian, the Saxon, the Spanish, the Netherlands, and the Egyptian 2 each; the Italian, the Danish, the Portuguese, and the Norwegian kingdoms 1 each; Brunswick, Hamburg, Lübeck, Bremen, Roumania, Servia, Persia, and the Argentine Republic also 1 each. The proceedings will relegate to the second line all purely controversial themes of hygienic science, and deal mainly with the thoroughly practical questions of human well-being. Of the twenty books and *brochures* distributed by the Hygienic Section among the members of the Congress, some of them ranging from 100 to 150 pages (the Demographic Section has limited itself to two *brochures* of a few pages each), the subjects dealt with are—Water in all its Aspects as a Necessary of Life, including Drainage, and the Preservation of Rivers from Pollution; the Utilisation of Human Refuse; the Adulteration of Food; Alcoholism; the Hygiene of Schools, of Seafaring Vessels, and Factories; the Erection of Isolation Hospitals; the Protection of Animals from Epidemic Disease by Inoculation; the Etiology and Prophylaxis of Cholera, considered with reference to the recent European visitations—the whole field, in short, of sanitary science in its rigidly practical bearings. The special sections, as well as the general meetings, will assemble in the new university buildings. Within the same walls has been brought together, chiefly through donations, a splendid hygienic and demographic library, which, after the close of the Congress, will become the property partly of the University Institute for Hygiene, partly of the Central Statistical Commission. In connection with the library there is also a magnificent assortment of plans and graphic representations of what may be called the *matériel* of sanitary and demographic science. The residue of the money subscribed for the Congress will be devoted to a foundation for the promotion of "fabriks-hygiene"—to remain as a monument of the Congress long after its immediate programme has been fulfilled. Demography, we may mention, will be represented at the Congress for the last time on this occasion, its votaries having made special

arrangements with the newly organised Statistical Institute for enrolment among its members.

The Organising Committee, as already remarked, has now issued in printed form the opening address, dealing with the twenty-two subjects set down for discussion. These in themselves constitute a formidable volume, and will enable all the members of the Congress to obtain a complete insight of each subject that is to be debated. The greater number of papers are in German, but these, for the most part, are accompanied with summaries of the main argument written in French. After German, second in number are the discourses in French, and finally there are four papers in English. The first is a report on the Purification and Utilisation of Sewage, by Dr. E. Frankland, of New Reigate; the second is a short Report on the Importation of Rags, by Professor Corfield; the third is an account of the Laws relating to Factories and Workshops, by Mr. F. Hayes-Whymper; and the fourth is a paper on International Regulations for preventing Epidemics, by Mr. Shirley F. Murphy. This latter may probably lead to a somewhat stormy debate, as it will be remembered that English ideas on quarantines were left in a minority of two at the last Congress, held three years ago at the Hague. Among the French papers, M. Durand-Claye's summing-up of the Shone and Waring systems of drainage is certain to elicit very warm contradictions. Indeed, we already hear of various speakers who are preparing for the fray; and it must be borne in mind that the debates open on September 26th, so there is not much time to be lost. The excursions and various entertainments all seem to have been organised on a very grand scale and with much method, and the number of adherents to the Congress being unprecedently large, everything indicates that this gathering will be more successful than any of its predecessors.

THE LANCET, Sept. 10, 1887.

THE final touches have now been given to the programme of this gathering. The opening ceremony will take place on September 26th, at 11 A.M., in the great hall of the Musikverein, when the Crown Prince Rudolph, "the protector of the Congress," will bid its members welcome in the name of the Kaiser. On the evening of the 28th, again in the name of the Kaiser, the members will be formally received in the Hofburg. Their number is now 1410, representing, as we have already shown, nearly every civilised State in the world, and every considerable association concerned directly or remotely in public hygiene. This number is likely to be still further increased, as the Congress extends its hospitality up to the close of its sittings, a hospitality which includes the gift of the very valuable publications dealing with all the topics to be discussed. The Vienna town council has shown itself fully alive to the importance of the occasion, and is taking

every care that no former seat of Congress, neither Paris, nor Brussels, nor Geneva, nor for that matter the best traditions of the merchant princes of the Venetian and Florentine Republics, shall be quoted to their disadvantage. The town hall lends itself, as few such buildings can, to festive celebrations and to the worthy reception of distinguished guests. The volunteer Rettungsgesellschaft (Preservation Society) of the city will exhibit on the Trabrennplatz (race-course) their preserving apparatus and sanitary *matériel.* The liberality of the various guilds and mercantile firms, to say nothing of neighbouring landed proprietors, in contributing to the funds of the Congress, has been munificent. The surplus, after the defrayal of all expenses, will be applied, as already stated, to the erection of an institution for perfecting hygienic manufacture in all its aspects, for which suggestions and criticisms are freely invited from members of the Congress.

As we write, the announcement reaches us that, by command of the Kaiser, a gala representation, in honour of the members of the Congress, will be enacted in the Court Opera House, which for that occasion will be placed at their special disposition. The performance will take place on Tuesday, Sept. 27th, and will conclude, appropriately, with the ballet of "Excelsior."

THE LANCET, Oct. 1, 1887.

IT is impossible to avoid the impression on reaching Vienna that the Congress is in some danger of being paralysed by its own extraordinary success. Never before has such a gathering been so well supported. No less than 2400 persons have paid their subscription of the ten florins each and enrolled themselves as members of the Congress. Nor is it mere abstract support; the majority are present in person, and it has been no easy matter to house so vast a throng. This difficulty is now overcome. Some of the delegates have been compelled to content themselves with very humble quarters, but this trifling inconvenience has to be endured on such occasions. What is more serious is the management of the Congress itself. In this respect it is to be feared a mistake has been committed. Though reports have been printed, introducing no less than twenty-two subjects for discussion, the Congress will be divided into only three sections. Nor is this all. The sections will not meet on Monday, and Thursday will be given up entirely to an excursion to the mountains, which are the source of the Vienna water supply. There are, therefore, only four days given to more than 2200 people to discuss twenty-two subjects. Evidently many a delegate will have to return home with his speech unspoken.

Before the opening of the Congress—that is to say, on Sunday evening—the festivities which this town is organising on a lavish scale already commenced. Several hundred delegates assembled in

the best rooms of the Horticultural Society, situated in the Park ring, which is the boulevard of Vienna. A sumptuous supper was provided, including some Danubian fish, which was highly appreciated. There were no speeches, as the evening was intended as an opportunity for renewing old acquaintances and making new ones. Already rumours are floating about as to the place to be selected for the next Congress. The Russian delegates are authorised to invite the Congress to St. Petersburg; but this is considered a long and expensive journey, to say nothing of the prospect of Siberia, if some of the delegates speak too freely. The Society of the British Medical Officers of Health and the British Sanitary Institute have agreed to invite the Congress to London. Assuredly this is only right, and England should before now have taken the initiative. Unfortunately, the British Government affords no assistance whatever. The pettiest countries of Europe, as well as all the Great Powers, have their official delegates present at this Congress; but the few Englishmen who are here come on their own account, at their own expense, or as the representatives of societies that are the outcome of private endeavour, and receive no support from the State. Certainly this is felt keenly by our continental colleagues; and many express wonder that England, which has done so much for the health of its own people, should in no wise have contributed to spread the knowledge of sanitary science in other countries. The fact that England is at last moving and will invite the Congress to meet in London will be taken as an awakening, and is sure to meet with much approval. But there is a third and still more likely proposal—that is, to hold the Congress in Paris during the great Exhibition of 1889. Everyone will then desire to be in Paris; and frequenters of these Congresses will remember the great success of the second International Congress of Hygiene, which met in Paris precisely under similar circumstances—that is, during the Universal Exhibition of 1878. It is doubtful also if the English would, in the main, care in any way to mar the great rejoicings which are organised to celebrate the centenary of the advent of freedom in France.

At 10 o'clock on Monday morning the beautiful hall of the Friends of Music was already thronged by delegates in the body of the building, and by a fashionable and elegant crowd of ladies and gentlemen in the gallery. On the platform the brilliant uniforms of Austrian officers, and the rich decorations and ribbons that decorated the breasts of the foreign official delegates made up an impressive picture. With military punctuality the Crown Prince Rudolph marched up to the platform amid the "hochs" of the assembly, and the proceedings immediately commenced.

Dr. Ernest Ludwig, Professor of Chemistry at the Vienna University, advanced to the side of the platform, and, bowing to the Prince, explained that from all parts of the civilised world men of science had gathered in Vienna. The Governments of nearly all the Great Powers and the municipalities of many celebrated towns

had their official representative standing close around the Prince. Never before had such a large and distinguished number of delegates met together to advocate the cause of sanitary science. This was a proof that the importance of hygiene was more widely recognised. Such progress was natural, for thus science would dispel most of the social evils from which we suffer. It was a promising feature of our modern civilisation to see so many nations working harmoniously together in the advancement of their common interests. Then, after describing the general scope of the meeting, Professor Ludwig declared that all was ready, and that they were only waiting for the Crown Prince to open the Congress.

The Imperial Prince at once rose and said: "Gentlemen, in sincerely thanking the president of your Organisation Committee, who has just addressed such kind words to me, I beg of you all to be assured that I consider it a pleasure and an honour to act as President of the sixth International Congress for Hygiene and Demography. Man is the most precious capital of the State and of society in general. Every individual life represents a certain value. To preserve this as intact as possible to its furthest limit is not only a command of humanity, but also the duty of every community in its own interest. Whatever means may be at our disposal to protect our own individual welfare, left to ourselves we are powerless in face of the general injurious influences with which nature surrounds us on all sides. Here only common action can be of any avail, and this great task is undertaken by hygiene, supported by demography. It is hygiene, based on a scientific basis, which enables legislation to obtain practical results on the extensive field of health administration. Looking over the papers which will be read at this Congress, we recognise with astonishment that the science of which you, gentlemen, are such devoted disciples, comprises every phase of social life—the dwelling-house and the school, production and war, the city and the village, trade and industry. The truly international importance of hygiene is also proved by the fact that so many illustrious representatives of all nations and countries are taking part in to-day's proceedings. I feel the greatest satisfaction, gentlemen, in welcoming you in this town, which is a centre of active scientific work and earnest research. In the name of his Imperial and Royal Apostolic Majesty, my most gracious master, I hereby declare the sixth International Congress for Hygiene and Demography open."

Professor von Gruber, secretary of the Congress, spoke at length in German, but gave the conclusions of his speech in French. The Congress had departed a little from its original programme so as to allow Professors Brouardel and Pettenkofer an opportunity of delivering their addresses in the presence of the Crown Prince. In organising the Congress, the difficulty of the diverse languages had been in part overcome by publishing the opening papers in more than one tongue; for these papers they had appealed to distinguished specialists of all nations; and, thanks to the generous support given, the Congress possessed undoubtedly a truly inter-

national—indeed, a universal—character. The local committees in all countries had nobly helped the work; but more particularly were thanks due to the local committees of Buda-Pesth, of Berlin, of Paris and its Society of Public Medicine and Professional Hygiene, and of Belgium and Holland. The programme of our labours, continued the Professor, has given us a day of rest, and we will profit by this to visit the institutions, old and new, of the capital. It will then be found that Vienna has many establishments built with a view to preserving the public health. The municipality of Vienna would receive the members of the Congress at the Town Hall in the afternoon, and the Emperor himself had eagerly availed himself of the opportunity to show the interest his Majesty takes in the young science by conferring on the members of the Congress the high honour of a Court reception.

After a few words from Dr. Köhler, the Reichsgesundheitsammt of Berlin, Professor Brouardel, of Paris, was called upon to read the first paper, on the Propagation of Typhoid Fever. Speaking with the easy flow of language which distinguishes the eminent professor, he tendered his homage to the Crown Prince, whom he was most pleased to see in the presidential chair. Sanitary science was not merely a subject of theoretic discourse. It must be followed by acts, and the Crown Prince was possessed of the power to act. His works also on science showed that he was further endowed with the knowledge which would enable him to know how to act. Professor Brouardel, though highly gratified, was not surprised at the excellent reception accorded to the Congress. Vienna for centuries was renowned for its hospitality to men of thought and study. Many had found in Vienna a second home. He would now seek to show what science had done; and, as an illustration, he selected typhoid instead of cholera, for in the long run it was the most fatal of the two diseases. At Geneva the International Congress was still undecided. Some said that typhoid arose from the fermentation of organic matter; others that a specific germ alone sufficed, without any decomposition of organic matter. The Congress could not agree whether the fever was contagious or only spread by water or the absorption, as food, of some other contaminated substance. In 1884 an effort was made to utilise the current of the Rhone as a motive power. A lock was constructed, and this caused some of the drinking-water supply to flow backwards towards the mouth of a sewer. Some months previously this sewer received the dejections from two or three isolated cases of typhoid fever. In a few days after the contamination of the water supply a serious epidemic broke out in Geneva, and there were no less than 500 cases. Last year at Clermont Ferrand and Mont Ferrand there were 300 cases of typhoid due to water contamination, while such places as Chamavière and Royat, though close by, escaped, their water being derived from a different source. In Paris, whenever the supply of the pure water from the Vannes or the Dhuys fell short, and the waters of the Seine, the Ourcq, or the Marne were used instead, the hospitals were

filled with patients suffering from typhoid fever, precisely three weeks after such alteration in the charactor of the water supply. Studying the question from the bacteriological point of view, Dr. Brouardel showed that the multiplicity of microbes rendered this investigation very difficult. After five years it was found that a few drops of carbolic acid in a culture broth had the property of killing all these microbes with the exception of the special microbe of typhoid fever. This latter developed so slowly that it escaped the action of the acid. In the examination of the waters the same process was used; and now it was possible to say definitely that such or such a substance contained the real germ of typhoid. At the same time he was not prepared to say that typhoid could never arise merely from foul air. In a family of nine, living on identically the same food, a son alone contracted typhoid fever. It was found that under his room window there was an open soil pipe. In another family precisely the same incident occurred, and this among his own patients, and quite recently. Nevertheless, water was the more general cause of the disease. He concluded by urging that it was more easy to cover water than to protect open rivers or canals from contamination. Water ought to be brought to the large towns in pipes or closed aqueducts. If we thus protected the health of the great centres, the rural districts would also largely benefit, as their epidemics were very often imported from towns. Dr. Brouardel concluded amid cordial applause.

Herr von Pettenkofer then read the second paper, on the Teaching of Hygiene in the Public Schools and Universities. Practical hygiene was the precursor of scientific hygiene. A rough conception of the agreeable and the disagreeable had in the first instance guided humanity. From this premiss scientific hygiene had developed. Practical hygiene is as old as humanity itself. What Englishmen call "comfort" is based on hygienic law. In the seventh century, when London had not a million inhabitants, the mean mortality was 42 per 1000 per annum; while now, with a population of 4,000,000, it is less than 21 per 1000. This sprang from the due observance of the British maxim that cleanliness is next to godliness. The professor then discussed at length the financial economy realised by the preservation of public health. In war even, disease more than the enemies' bullets killed the greater number of soldiers. But the Crimean war was particularly fruitful in showing how hygiene could and must be introduced into the army medical schools. Other States are now following the English example. In the Franco-German war the result of this teaching could already be perceived. Thus the whole loss of the German army was 40,881: killed in battle 28,282, accidents 346, and disease 12,282. In the Crimean war the French lost a third of their whole army, 95,000 men. Only 20,000 out of this number were killed, while 75,000 died from disease. Many further and most conclusive tables were given setting forth the saving of life and money that had rewarded the spread of education, and a better knowledge of the influence of air, water, and soil

on the public health. He urged the necessity of establishing special schools for experiments, as on experiment alone could the laws of hygiene be established.

After this speech, which had been warmly received, the meeting broke up, and some of the prominent members of the Congress were introduced to the Crown Prince.

On Monday the reception given by the municipality at the magnificent Town Hall of Vienna was a most brilliant success. The Town Hall was effectively illuminated, a sumptuous repast with many Viennese delicacies was provided by the municipality, and an excellent band played in the large hall. Later in the evening a more social entertainment (*Kneipabend*) was organised, consisting of a simple supper, with music, choruses, and solo songs. Thus on the first day there was certainly more play than work. As usual at these sanitary Congresses, the most insanitary conditions prevailed at the places of meeting. The want of ventilation was most apparent, the heat being very oppressive; and it is a question whether it would not be possible, at future Congresses, to preach a little more by example, and provide properly ventilated rooms for the meetings.

Among the English present may be noted Sir Spencer Wells, Sir Douglas Galton, Dr. Cameron, M.P. (Glasgow), Professor Humphry (Cambridge), Professor Frankland, Professor Corfield (London), Dr. C. E. Rickard (Birmingham), Dr. Russell (medical officer of health, Glasgow), Mr. Shirley Murphy (London), Mr. Adolphe Smith (London).

On Tuesday morning the work of the Congress began in earnest. The different sections were crowded; many delegates were not able to obtain seats. The discussions proceeded in a very orderly manner, but some rather serious misunderstandings have already arisen through the confusion of tongues. A very important discussion, in which Professor Virchow and Professor Brouardel held different opinions on the dangers often present in drinking water, was brought to an unsatisfactory and premature close by the above cause. Next week it may be possible to disentangle the confused mass of speeches already delivered, and reproduce some of the more important arguments. For the moment it may be said, in conclusion, that the principal fault of the Congress is its overflowing success. The number of members now amounts to 2500; perhaps the figure of 3000 will be reached before the close of the proceedings.

THE LANCET, Oct. 8, 1887.

THE greatest International Congress of Hygiene that has ever been held has now completed its labours. It is somewhat too early to judge the wisdom of its resolutions; and, indeed, these are buried in such a maze of documents, reports, and speeches that no one has yet fully realised what has been done. It is impossible to be in all Sections at one and the same time; and were this even possible, the confusion of languages often

makes it difficult to follow the debates. In this respect the Congress has not been so well managed as its predecessors. In all former Congresses, French was recognised as the official language. Speeches in other languages were allowed, but on the condition that they were translated into French, and, of course, all resolutions and official documents were drawn up in French, and the votes taken in French. Thus, foreign delegates were kept together and were fully able to follow the proceedings.

Considering the immense preponderance of Austrian delegates and members present, some regulation should have been established on the present occasion to prevent their speaking too often. The Germans, who, as the nearest neighbours, were the next in numbers present, joined heartily with the Austrians in speaking German. Thus speech after speech was pronounced in German, a language which the great majority of the foreign delegates present could not understand. These were so badly translated that the foreigners soon ceased asking for such interpretations; and, in some Sections, no attempt whatsoever was made at translation. Therefore the majority of the foreign members were obliged to pass wearisome hours, without understanding a word of what had been said. The result was that after a little of this experience a great many went away. Vienna is an attractive town; there were many excursions organised, and the proportion of foreign delegates at the Congress became less and less numerous. Instead of sitting out all the meeting, and taking an active part in the debates, they would look in for a moment or two and then revert to the greater attractions of the Ringstrasse. For hours together I was the only Englishman present in the several Sections I attended. Thus the Congress, to a considerable extent, degenerated from an International Congress into an Austro-German Congress.

Even worse than this was the method of voting. Those present raised their hands for or against the various propositions without any attempt to analyse the vote and ascertain what it represented. Thus, on one occasion, in the First Section, the Baron de Suzor and myself were the only persons present to speak or vote for Russia and England. If we take the Indian Empire, the English colonies, and the Asiatic as well as the European dominions of Russia, it will be found that the interests of something like five hundred million souls only counted as two voices in a division against thirty or forty Viennese doctors, who at most represented one single town. Considering that any Austrian who chose to pay 16*s.* was admitted as a member of the Congress, it was preposterous to give to hundreds of unknown amateurs who have never studied hygiene the same voting power as the distinguished representatives of foreign Governments and scientific societies. A national local Congress could have told us what several hundred Viennese doctors have to say on various sanitary subjects. It was not necessary to bring delegates from all parts of the world to know what opinions prevailed at Vienna. What is wanted is the opinion of various nationalities on subjects of

international interest. It would be most useful to record from time to time how this opinion develops itself; but if mere local majorities are to govern the decision of these Congresses, there will be no sequence—they will alter according to each place where the Congress meets, and will always exhibit contradiction. Thus, in Portugal the immense majority would be in favour of quarantines, and in England the result of the vote would be just the opposite. Evidently it is by nationalities that the vote should be taken. We want to know what nations are in favour of or against quarantines, &c. The Austrians present should have had but one vote (however numerous they might have been), the Germans one vote, and so on for all nations. It is quite easy to call on the representatives of each nation to stand up and give their vote separately, and, when not agreed among themselves, the majority would govern, note being taken whether the vote was unanimous or not. The majority thus obtained would represent the opinion of the Congress—that is to say, a truly international opinion, and not, as at present, an Austrian vote with just a slight sprinkling of foreign elements. The as yet somewhat incomplete list printed sets forth that there were 2414 members of the Congress, and out of this number 1277 are marked as present. Now, of these members present, no less than 397 live in Vienna, and this does not include those who reside in the suburbs of Vienna. Thus, Vienna alone represents something like forty times the voting power of the entire British empire.

These criticisms are all the more necessary and important, as it is now decided, in response to an invitation of the British Sanitary Institute and the Association of the Medical Officers of Health, that the next International Congress of Hygiene shall be held in London. As the Universal Exhibition will draw most persons to Paris in 1889, it would be difficult to hold a Congress elsewhere that year; but, on the other hand, Paris has already been the seat of one Congress—namely, the second International Congress of Hygiene. Consequently there will be a French Congress held in Paris in 1889, at which foreign representatives will not be obliged to attend, but where they will no doubt be heartily welcome if they choose to go. The seventh International Congress of Hygiene will then follow in due course two years later—that is to say, in 1891—and in London. In the meanwhile a committee has been elected to organise and prepare the International Congress, consisting of Dr. Brouardel for France, Dr. Dobroslavine for Russia, Dr. Billings for America, Professor F. de Gruber for Austria, Dr. Roth for Germany, Dr. Mosso for Italy, and Professor Corfield and Mr. Shirley Murphy for England. These gentlemen have agreed to meet at Dresden on the 10th of October next year to talk the matter over, and it is to be hoped that some arrangement will then be made to confer on the next Congress a more truly international and representative character.

In all other respects the present Congress has been a marvellous success. It would be difficult to find in all Europe a town better

suited for a Congress than Vienna. The majesty of the buildings, the broad expanse of the thoroughfares, the splendid halls, restaurants, and meeting places all combine to facilitate a brilliant reception; but, more than all, the innate amiability, the courtesy, the easy gracefulness of deportment which distinguish the Viennese population, make it alike a pleasure and an honour to be entertained by such a people. From the Crown Prince, who graciously received the members of the Congress at the Imperial Court, mixing and conversing freely with his guests, down to the humblest attendant at the University where the Congress met, all were alike animated with that spirit of amiability which leaves a lasting and most pleasant impression. The excursions to Semmering, to Kaiserbrunnen, and to many other places of interest near Vienna were all admirably organised and successfully conducted. And now 400 members of the Congress start for Buda-Pesth in a special steamer, where they will be entertained for two days and shown many things of interest.

As for the actual work done by the Congress, the report of the speeches will fill more than one bulky volume. Nor is it easy to give the resolutions, for in some instances, instead of resolutions, the summary of long papers was adopted. These constitute little pamphlets of themselves; and if a Congress chooses to adopt a pamphlet instead of a resolution, it can scarcely expect the Press to reproduce the pamphlet. This and other similar mistakes can only be attributed to the fact that a considerable proportion of the members belonged to countries where the freedom of meeting, of association, and of debate is to a great extent denied. They have not acquired the habit of self-government, and therefore do not know how to conduct meetings so as to produce the greatest influence on public authorities and on public opinion. While in some Sections the resolutions, or conclusions as they were sometimes called, were of impracticable length, in other Sections no resolutions whatever were put or discussed. Thus in Section 1, dealing with the question most germane to hygiene—viz., drainage—no definite result was obtained, M. Durand-Claye, the chief engineer of the Paris Ponts et Chaussées, presented a report on the Shone and Waring systems of drainage. It would be impossible to underrate the services rendered by M. Durand-Claye. His energy is indefatigable. In all the Congresses he comes to preach the holy doctrine of cleanliness, of plenty of water, and plenty of air. In Paris he has had the courage to attack vested interests, to defend poor and unprotected tenants in working-class districts against the sanitary delinquencies of jerry-builders and rack-renters. But in discussing the Shone system, he clearly showed that he knew but little about the subject. He objected to all separate systems, because the rain-water washing down the gutter in the streets of towns contained as much organic matter and germ life as sewage itself. But, as M. Poutzen, who defended the Waring system, replied, it is not the quantity, but the character of the germ which is of importance; and, as the germ of typhoid fever does not liquefy gelatine, its presence would not be shown in the analysis

brought forward by M. Durand-Claye. Many eminent sanitarians took part in the debate, and the opinion with regard to a separate system or canalisation for sewage proper was about evenly divided. With regard to the Shone system, it was pointed out that it was not necessarily a separate system. In the House of Commons it drained off the rain, and the rain occasionally amounted to forty times in volume the quantity of sewage proper. At Eastbourne, where the rainfall had recently been estimated at half an inch within an hour and a half, it also took all the rain-water. Nor was there any complicated machinery. The Shone apparatus for raising sewage to a higher level by pneumatic propulsion had been in work for six years at Eastbourne without any breakage, accident, or stoppage whatever occurring. The real question is that in many streets, localities, and towns there is not a sufficient fall for sewers. Hence the sewers are not self-cleansing. In many instances the sewers are much too large; there is therefore more room for the generation of sewer-gas, and there are more deposits on the sides. Smaller sewers would be much cleaner; but, on the other hand, cause much more friction, and therefore require steeper gradients. These the topography of a town does not generally provide. They must be created artificially. When the sewage is too low down it must be lifted up, so that it may once more resume its course by the force of gravitation. Steam pumps, as a rule, take too much room, and are too expensive to be applied on a sufficiently extensive scale. It is in such cases that the Shone system, already employed in eighteen towns, renders great service. The case of Henley-on-Thames was cited, where, as compared with the expense of providing a steam-pump and ordinary sewers, an economy in the original outlay of 25 per cent. and in the yearly working expenses of 50 per cent. will be realised. At the same time the sewage will be lifted four times the height, thus giving the sewers a fall four times greater, and will be sent a mile further away from the town. In the face of these facts, M. Durand-Claye, in his reply, withdrew his aspersions against the Shone system; maintained that the adoption of this or the Waring system must depend on local circumstances; and that, for his part, he was quite content if the Congress agreed with him in the necessity of doing away with cesspools, and of draining directly into the sewer. With concluding remarks to this effect the question was allowed to drop.

On the other hand, in the discussion on cholera and quarantine, an immense number of resolutions were brought forward, some containing very mischievous principles. But they were most ably combated by Professor Max Pettenkofer, of Munich, Dr. Mosso, of Turin, and Mr. Shirley Murphy, of London. The latter gentleman pointed out that all speakers at the Congress had approved the necessity of enforcing sanitary reform in the towns exposed to infection. This was recognised on all sides as the most effective precaution. The only point under debate was whether such measures of medical inspection should be adopted as practically involved the imposition of a quaran-

tine of five days. In England the belief in the utility of such a precaution had long since been abandoned. Its application would lead to the neglect of those sanitary measures so strongly recommended by Dr. Max Pettenkofer. The idea of excluding from Europe ships which, in passing the Suez Canal, were found to have had cholera cases on board was not logical, for the land route would still remain open. The retention of these ships would engender a sense of false security, and prevent seaport and other towns adopting those sanitary measures which were really useful.

The manner in which these and similar observations were received showed how greatly public opinion has developed on this question; but the speech of Dr. Mosso, the Italian delegate, was particularly remarkable in this respect. He explained that Italy had gone through both experiences. They had imposed the strictest quarantine, and had imposed it everywhere. But it had proved to be good money thrown away. The same Minister (Signor Crispi) who had imposed quarantines now declared them to be useless. At Turin, thirty trains a day came to the town from an infected district during the recent Exhibition. There were about 100 cases of cholera imported, and no further mischief arose. Quarantine in the Red Sea, while Algeria, Tunis, and Tripoli remained open, was a mere vexatious inconsistency. By far the greatest good would be done by telling people that their immunity from cholera depended on their using plenty of pure water and living in clean houses.

By such speeches the worst passages were eradicated from the resolutions; and when these are published they will show that opinion on the Continent on this subject has made considerable progress. The resolution will have issued from the printing offices in the course of a few days, and then, and in another letter, it will be possible to deal more fully with the work of the Congress.

From a Correspondent at Buda-Pesth.

Sir Spencer Wells and Professor Humphry have just been here on their way to the Hygienic Congress at Vienna, which, as will be remembered, Sir Spencer was requested to attend as delegate by the College of Surgeons of England, and Professor Humphry by the University of Cambridge. The members of the medical profession of the place, being forewarned of the visit of Sir Spencer Wells, availed themselves of the opportunity to do him honour and pay him attention. At appointed times they met him at the several hospitals to show him the institutions and consult him respecting the cases. In the evening they gave him a banquet in the Queen of England Hotel, during which an address in English was made to him by the medical students. In his reply, Sir Spencer encouraged them to diligent work, by which alone they could obtain success, and exhorted them to take advantage of the very great opportunities for clinical instruction which their hospitals afforded. Replying to his health, which was proposed in a complimentary English speech by Dr. Mackiesovszki, he thanked the

members present sincerely for the honour they had done him, and expressed his great satisfaction at what he had seen in their hospitals. Professor Humphry, in reply to the toast, which was proposed to him as delegate from Cambridge by Dr. Jauffer, thanked those present on behalf of the medical profession in England for the honour they had done to one of its members who was justly esteemed for the part he had played in bringing about the great triumphs which had been recently achieved in abdominal surgery. The professor further complimented them on their hospital arrangements, and the refinements in their instrumental methods of diagnosis, which exceeded, he believed, those employed in any hospital in his own country.

The hospitals which were visited certainly corroborate these remarks. Great attention is paid to ventilation and heating, which during the severe cold of winter are effected with much difficulty, to general sanitary arrangements, and to the care and comfort of the patients. The clinique of each professor occupies two or more hours daily. He attends himself to the dressings of the more important cases, and there is much harmony between him, his assistants, and the students. There is a physical laboratory, with a delicate electrical apparatus for testing the sensitiveness of the general surface and of the ear, the action of muscles, &c., in addition to the ordinary methods for diagnosis and treatment, also a histological and a bacteriological laboratory attached to each hospital. Antiseptics are largely used. In one ward under Dr. Ellescher were five women recovering from laparotomy on account of uterine and ovarian tumours. Several specimens of cancer of the uterus were shown, in which the whole organ had been successfully removed through the vagina by Dr. Jauffer, and this surgeon elicited the high approbation of Sir Spencer Wells for the manner in which he performed a difficult operation of enucleating from the left broad ligament a compound ovarian cyst of considerable size, which, from the position of the uterus and other signs, had been diagnosed by himself and Sir Spencer Wells to occupy that position. The carbolic spray was diffused through the room, not directed upon the patient, and carbolic water was freely used throughout. The bleeding vessels were secured with silk ligatures, and a portion of the broad ligament having been ligatured and cut away, the remainder was stitched to the surface of the uterus, as first done by Sir Spencer Wells.

The Red Cross Hospital, which has been opened about two years, receives private patients, who pay three, two, or one guilden (6*s*., 4*s*., or 2*s*.) a day, for which they receive board, lodging, and medical attendance, an extra fee being paid for operations. The plan and administration of this hospital are admirable. It is supported mainly by private contributions and subscriptions, and subsidised by Government, which pays for all the stores, medical and surgical appliances, ambulances and carriages for the sick and wounded, &c., which are kept here and supplied to the several military stations in time of peace, and to various parts in time of war. One block is reserved for nurses, who, having been trained in the hospital, are

available for attending the surrounding district. The lady superintendent, who accompanied the party round, is a highly intelligent person, and deeply interested in the work, priding herself especially upon the excellence and cleanliness of the culinary department, as well as upon the variety of the stores and the manner of their disposition.

THE LANCET, Oct. 15, 1887.

THE decision of the International Hygienic Congress to hold their next meeting in London makes their recent proceedings in Vienna of especial interest to Englishmen. It has only of late years been possible to regard the subject of hygiene as one fitted for international consideration. The complete neglect of sanitation in some countries and its imperfect recognition in others proved that its relation to national prosperity was not sufficiently understood, and suggested that no general European interest would be felt in the discussion of conditions affecting health. By degrees knowledge has increased, and, taught by the sad experiences of the last few years, the more enlightened nations have turned their attention to methods of preventing disease. As a result the Congress at Vienna brought together nearly three thousand people from all parts of the globe, and papers were read and discussed in a manner which proved that a higher value attached to health than heretofore. This was especially seen in the demand for legislative control which was put forward by many who took part in the proceedings at Vienna. Interference with the freedom of personal action is more readily accepted on the Continent than in England, and it is but natural that those who have satisfied themselves of the advantages which legislation on one point or another would confer on communities should thus wish to enforce their doctrines. But the Congress showed, as all Congresses show, that, if the opinion of the many is to be made the basis of legislation, there would at times be the greatest amount of interference with the least amount of good. The Vienna meetings will serve the double purpose of indicating the necessity of skilled investigation of the causes of disease, and of encouraging statesmen to rely upon work of this character rather than upon collective opinion.

The excellent work which is carried on in the continental laboratories has undoubtedly had its effect in teaching the value of exact knowledge, but there was none the less too great a desire at Vienna to record by resolution the opinion of numbers, regardless of their fitness to exercise any proper judgment upon the points at issue. This was especially objectionable when the subject had any reference to the practice of different nations. In meetings composed in greater part of members of one race and of one way of thinking, it was impossible that decisions should not depend upon this circumstance, and any attempt to express an international feeling, whatever it might be worth, was therefore certain to lead to an untrustworthy result. In the Congress to be held in London this would be still more un-

desirable. In some respects England is far in advance of other countries; she has been the subject of numerous experiments extending over many years, and the experience thus bought has placed her sanitary administration on a more secure footing. It would be impossible to prevent English feeling unduly preponderating if collective opinions were sought at meetings in London, and it will be well to guard against any action that would place the members of other nations at a disadvantage.

The best work of the Congress is educational. The excellent paper of M. Emile Trélat, of Paris, will certainly do much to encourage a study of the principles which should guide architects and local authorities in the building of houses and the laying out of streets. The accumulation of evidence in papers read before the Congress that cholera is disseminated by human intercourse, and especially by the fouling of water supplies, will give impetus to the improvement of localities which may now give opportunity for the propagation of this disease. It is by work of this nature that the teaching of peoples can be best effected, and the fact that all nations are alike interested in the questions which affect life is the best promise that their study will progress.

THE LANCET, Oct. 22, 1887.

As the resolutions adopted by the International Congress have not yet been published, it is impossible to form a clear and complete idea of what has been voted. There is, however, in a scattered form, ample evidence of the great amount of work and research that has been undertaken. For a thorough investigation of the opinions expressed and the votes accepted it will be advisable to wait until the publication by the committee of the full report of the Congress.

In respect to the work of the Sections, one of the most original papers read was that of M. Emile Trélat, on the Means of bringing the Heat of the Sun and Proper Light to Dwellings. This is a subject of such vast importance that it must be reserved for a special study. Meanwhile, it may be mentioned that M. Trélat insisted that every wall which did not receive the direct rays of the sun would rot and harbour the germs of disease. To secure this purifying action of the sun during winter, it was necessary that streets running from north to south should be twice as wide as the houses were high. For giving light within the rooms he conclusively proved that windows required to be heightened rather than widened. This led to a lengthy discussion, during the course of which Dr. Knauff, of Berlin, spoke of the caloric power a centimetre of space receives, and concluded by urging that Venetian blinds should be made to open in vertical instead of horizontal lines. Professor Baumeister urged that the direction of streets was of no importance, for what the house lost on one side it gained on the other. He further attacked the laws of Berlin for making no difference between the rules regulating the building of

houses in the centre and in the suburbs of the town. Evidently it was possible to enforce in the suburbs much more severe regulations. Professor Cöhn, of Berlin, thought a debt of gratitude was due to France for having first introduced measures for the construction of windows in school-rooms on scientific principles calculated to save the eyesight of the pupils. It was then proposed to thank M. Trélat for his report, and to proceed to the next subject. Baron de Suzor protested. He demanded that the Congress should establish principles, and should proclaim what was necessary in the first instance. It would be time enough to discuss whether these principles were practical or not when they had been firmly established. In St. Petersburg, which he had the honour of representing, all the new streets were fifteen metres wide, and it was not allowed to build a house higher than fifteen metres. The openings at the back of the houses were also fairly large, and there were rules to ensure sufficient light to the inhabited rooms. M. Trélat replied that rules for the construction of streets likewise existed in France, but they did not suffice to meet the case. The Russian regulations represented but a trivial progress, for the houses were one and a half times as high as the back yards were wide. With respect to the compliments Professor Cöhn had made to the French nation, they were really due to Professor Cöhn himself, for it was his work on Shortsightedness, written some fifteen years ago, which had induced the French Government to protect the eyesight of the children in schools. Baron de Suzor again rose to explain that he only gave details about the rules enforced at St. Petersburg in the hope that the Congress would pronounce a definite opinion that something better was required. In spite of this, the Section came to no decision. Some proposed to adopt M. Trélat's conclusions, others to merely thank him for his paper. In the confusion that resulted it was impossible to say whether either of these two proposals was adopted. No clear and decisive vote seems to have been taken. This was all the more unfortunate as M. de Suzor had evidently a definite object in view. Armed with a resolution from the Congress, he might have brought pressure to bear upon the authorities of St. Petersburg. It is to be regretted that the ability and special knowledge displayed in this discussion should not have brought about a definite conclusion.

The question of Teaching Hygiene in all Educational Establishments was very generally discussed, and the principle adopted. Many members of the Congress, however, did not seem to realise that the great difficulty, especially on the Continent, is to find competent teachers. Many speakers seemed to think that when they proposed to confine this task of teaching to medical men the whole difficulty was solved. But a great number, if not the majority, of medical men, on the Continent at least, have no knowledge of practical hygiene. As an English delegate inquired during the course of the debate, was the Congress quite sure that even the doctors present knew how to test a soil pipe for leakage, how to direct the construction of drains, and detect the escape of sewer-gas?

The debate in the Second Section on Factory Legislation was long and laboured. It was regrettable that Mr. F. H. Whymper, superintending inspector of factories, whose sketch of the working of the law in England formed, with a paper by Dr. Fridolin Schuler, of the Canton Glarus, Switzerland, the basis of discussion, was not present to take part in the votes on the resolutions. It was generally accepted that the local circumstances relating to factories differed so widely that no one general rule could be laid down relating to the amount of air, heat, and light required. In these cases special technical knowledge is necessary, and the method of factory inspection should be such as to admit in consultation those who possess the necessary practical experience. When serious dangers can only be prevented by the total suppression of certain industries—such as, for instance, the use of arsenic or phosphorus—then such suppression should be the result of an international treaty, and should affect several nations simultaneously. A very excited discussion arose as to the Half-time System. It was generally felt that if the children were allowed to go to work before they had completed their education, this practice would become a means of making them work too early in life. On the other hand, it was objected that the half-time system had given the best results, and that many children would complete their education before the law allowed them to work; this would enable them to waste a year or two in lounging about the streets, to the great detriment of their health and morals. The conflict of opinion rendered it impossible to establish any definite rule on this question. The principle of State legislation for the limiting of the hours of labour, not only for women and children, but for men also, was approved on all sides, and a resolution in favour of an International Eight Hours Bill was almost carried. A ten hours' day was carried by a large majority, coupled with the desire that this should be regulated by an international treaty. The Saturday half-holiday was also approved. Then there was a resolution adopted to the effect that where, as in the piercing of tunnels, &c., the employers had to provide food for the workmen, such food should be occasionally examined by independent inspectors. During the course of the discussion it was pointed out that three classes of inspectors were required: doctors for all matters relating to medicine, and prophylaxis; specialists, whether doctors, architects, engineers, or others, for difficulties relating to drainage and ventilation of workshops and factories; finally, with respect to the various methods by which unscrupulous employers elude the law, to the detriment of the health of their workmen, inspectors should be selected from among the victims themselves. A resolution to this effect was put late in the day, and when the room was nearly empty. It was defeated by 21 against 13; but in the majority there were no less than five manufacturers and several Austrian inspectors of factories. In Austria these inspectors are selected from among the commercial classes. The chairman himself was a factory inspector, and had been formerly employed by a chamber of commerce. Under these circumstances, while the working-class interests were not

directly represented, members of the commercial and manufacturing classes, who are keenly interested in checking factory legislation, were present in large numbers, and took a very active part in the debates. This is scarcely fair. The object of the Congress should be to obtain the disinterested opinion of men of science engaged on sanitary reform, instead of having to listen for hours to manufacturers who are doing their utmost to prevent such legislative interference as will, while improving the health of the population, tend possibly to limit the present almost inexhaustible supply of cheap labour. In such matters it is difficult to prevent a collision between economical and sanitary problems; but, in any case, the points at issue should be debated purely on sanitary grounds, and the vote should not be influenced by persons who have their own financial interests at stake. In spite of this alien influence present in the Section, some very strong resolutions were carried by the doctors who assisted. One resolution, for instance, was proposed in favour of assimilating railway servants and private servants to ordinary workmen, with regard to such legislation as affected factories, the hours of labour, &c. This, at the first vote, resulted in a tie of 15 against 15; and at a second trial was carried by 15 to 9. The small number of voters in this Section shows how many members abandoned their work in consequence of the great difficulty of understanding what was going forward, as was mentioned in a previous letter.

In the same Section, Professor Erismann, of St. Petersburg, related how he had examined 100,000 workmen, and found that, on an average, those engaged in textile industries were not as tall as the other classes of workers. Their chest measurement and bodily weight were also inferior. These symptoms of degeneration of the textile workers were more particularly distinct among the spinners. In every respect also they took a longer time to grow. Finally, the lifting power of the hand was not so great as that of workers in other trades.

A Fourth Section was created for the hearing of papers without discussion, and here Professor Reis lectured on Colour-Blindness among Railway Servants. He dwelt at length on the mode of examining the sight, and said that, in all countries, committees of physicians should meet to determine what methods were best, and to see, from time to time, whether these could not be revised. Professor Tessier, of Lyons, followed with a paper on Diphtheria, in which he expressed a belief that the virus was contained in dust, and that there was an intimate connection between diphtheria in poultry and among human beings. In the same Section an essay by Dr. G. Treille, professor at French naval schools, on the Acclimatising of Europeans in Tropical Countries, was so warmly approved that the Section decided to reprint and distribute the paper at the cost of the Congress.

The discussion on the Trade in Rags, commenced at the Hague Congress, was resumed in the Third Section. Professor Corfield had prepared a report on this subject. He stated that the questions he

had addressed to various interested parties resulted in very unsatisfactory replies. The trade would be thoroughly opposed to the projected packing of rags in a covering soaked in a corrosive sublimate solution. Dr. E. Vallin, of Paris, and Dr. Finkelnburg, of Bonn, spoke next. The latter drew a line between dirty linen and rags. He gave details of different cases of epidemics traced to importation of rags, and thought that they more frequently caused outbreaks of small-pox. The proposal to disinfect all rags by heat would cause too great an expense. Dr. Henri Martin, of Paris, then read a masterly description of the scientific experiments made in the disinfection of rags. The difficulty had always been to reach the centre of a bale. He remarked that by dividing the bales it was possible to satisfactorily disinfect them at a cost of about £2 for a hundred bales, or twenty tons. A long discussion ensued, in which it was suggested that no particular form of disinfection should be approved, as new inventions modified these methods from day to day.

The Third Section, in which the questions relating to Cholera had been discussed, was so overwhelmed with work that it had to form a sub-section, and here M. Chamberlain, as the representative of M. Pasteur, spoke on the results obtained by Preventive Inoculations against Anthrax. He produced numerous statistical tables. Two German physicians, Drs. Gaffky and Loeffler, formerly Dr. Koch's assistants, challenged these statements ; but Dr. Lydtin, of Karlsruhe, said that good results have been obtained in South Germany by inoculations for the prevention of anthrax. With respect to swine plague, the upshot of the experiments made was not so satisfactory, and scarcely justified the confident recommendation of the process of inoculation. A very animated discussion ensued, and most of the speakers expressed their conviction that the scientific value of the Pasteurian methods could not be doubted, but that for practical application further experiments were necessary.

On the Saturday the Sections were to have terminated their work in the forenoon, but the Third Section met again in the afternoon, and a large crowd of members were present to hear M. Chamberlain on the Prevention of Rabies. He apologised for M. Pasteur's unavoidable absence, due to his indifferent health, and then delivered a most interesting lecture, which, unfortunately, the limits of space render it impossible to reproduce. He remarked that when M. Pasteur commenced his studies nothing was known of rabies. The virus was generally supposed to be in the saliva, but it was ultimately found that certain results could only be obtained by going to the nervous centres. Even then, when the nervous substance was merely injected under the skin, several weeks passed before rabies entered. Then M. Pasteur had the idea of introducing into the brain, by trepanning, the marrow of an animal killed by hydrophobia. By this means the results obtained were absolutely reliable. Illness commenced in fifteen days, and death took place on the twentieth day. Several hundred experiments have proved this. There is never a variation

of more than one or two days. In the presence of this double result, the possession of a true virus and a trustworthy effect, it seemed as if a basis of action had been found. M. Pasteur had all along conceived the hope of making a vaccine. Unfortunately, for rabies the same process could not be employed. M. Chamberlain then explained the various methods of research which led to the discovery of a method which could be relied on for attenuating this virus; how a young Alsatian volunteered to submit himself to inoculation, and how, with the success of this experiment, hundreds had come to be treated in a similar manner. It was impossible to say how many lives had been saved. There were no data on which to establish such a calculation. Some authors had maintained that the proportion of deaths from bites of mad dogs amounted to 36 per cent. The very least to be found in books on the subject was 16 per cent., and no one had ever pretended that the mortality was less than 5 per cent.; yet after vaccination the death-rate among M. Pasteur's patients had only amounted to 1·3 per cent. It could not be said how great the reduction in mortality had been, but it was impossible to deny that it was very considerable.

In the discussion that followed, one or two speakers related how they had failed in various experiments to bring about the expected and desired results. Others, on the contrary, expressed their entire satisfaction, and gave figures showing the number of persons who had been successfully treated. Dr. Metschnikoff, of Odessa, notably, recognised the great work achieved by M. Pasteur, and proposed the compulsory vaccination of all dogs. M. Chamberlain had no difficulty in replying. He congratulated himself on finding that all parties approved of the principle of inoculation. The proposition to vaccinate all dogs was a proof that the principle was accepted. Some had spoken of negative results. The vaccine might easily be spoilt and other microbes gain admission. Material errors would, of course, produce negative results, and a certain amount of practical experience was necessary. In Paris there had been no failure whatsoever, and abroad many successes. M. Chamberlain explained where and how many errors in experiments had been made which falsified the result; and then concluded, amid the loud applause of a crowded room.

This brought the business of the Congress to a close; but on the following Sunday morning a formal meeting was held in the great hall of the University, when two papers were read: one by Dr. Conradi of Pavia, on the Connection between Longevity, Anthropology, and Hygiene; the other by Dr. C. T. d'Inama-Sternagg, Royal and Imperial Councillor, President of the Austrian Statistical Commission, on the most Remarkable Modifications which the European Populations have undergone during the last thousand years. When the papers had been read, the Congress decided to meet again in London in 1891, and elected a committee, as already mentioned, to organise the next Congress. A few short speeches then ensued. Dr. Mosso recalled the Congresses on the plains of Olympia, when

Greece had reached the zenith of its civilisation. It was no longer the little States of Greece that met, but all Europe. The Congress would constitute a page in the history, not of tyrants and men of selfish ambition, but of humanity. In the name of Italy he offered his best thanks to the organisers of the Congress. M. Emile Trélat, in the name of France, spoke in the same strain. Hygiene progressed rapidly; the number of members of this Congress, amounting to 2500, proved the growing popularity of the new science. This result was due to good organisation and to the facilities which the vast building of the University afforded; but the amiability of the Viennese people had, more than all, facilitated the great work. "This soft amenity, which is true strength, had made the success of the Congress."

The name of the general secretary, Professor von Gruber, was often associated with these speeches of congratulation, and certainly it is impossible to speak too highly of the devotion, the unfailing zeal, and the energy of the general secretary. Thus the Congress came to an end. It was nearly two in the afternoon when the final cheers were given, and the members hurried away to prepare for the excursion to Buda-Pesth, and the farewell banquet given on the same evening.

In this comparatively brief account of the debates there are many important omissions. Numerous speeches and papers were read and delivered quite as interesting as those to which some allusion has been made. To their authors sincere apology is due, but the laws of measurement and of space are inexorable, and some sacrifices had to be made. It would not, however, be right to leave undescribed the marvellous reception, which lasted three whole days, accorded to the six hundred members of the Congress who went to Buda-Pesth. This most impressive and last phase of the sixth International Congress will be the subject of a subsequent letter. In the meanwhile, it only remains to add that, under the gallery of the vast courtyard of the University, there was during the Congress a small Sanitary Exhibition. Here might be seen specimens of school furniture, of warming apparatus, a great collection of statistical charts, and the familiar exhibits of the English Ladies' Sanitary Association and the English Society for the Prevention of Blindness, with Dr. Roth in person to explain to all continental hygienists how the knowledge of sanitary questions was popularised in England. There were also ambulances, cooking stoves, portable hospitals, and many other kindred subjects. In every sense, therefore, the sixth International Congress must have greatly contributed to spread the knowledge of sanitary questions in Austria and throughout Europe.

THE LANCET, Oct. 29, 1887.

AMONG the many practical advantages arising from the International Congress of Hygiene recently held at Vienna, we should mention the very active campaign carried forward on an international basis against food adulteration. This grave question was first brought forward by Dr. Brouardel at the Geneva Congress in 1882. He then showed how long it took to discover first the existence of adulteration, and secondly some practical means of easily detecting its presence. Then the law had to be moved in the matter, and often that required more work and time than all the other parts of the process. Meanwhile, manufacturers who had able chemists in their service discovered some totally different method of adulteration than that hitherto in vogue, or else simply crossed the neighbouring frontier and there found a law and methods of analysis not conceived for the purpose of checking their particular method of fraud. Thus, under a different Government the old practices of adulteration could be commenced over again. Dr. Brouardel strongly urged the necessity of assimilating as far as possible the legislation of all nations on this matter. At the Congress of the Hague, in 1884, it was decided that inquiries should be made as to the law against adulteration in all countries, and consequently for the Vienna Congress Dr. Brouardel was able to present a report giving the result of this investigation. We have thus before us a summary of the laws and decrees against adulteration enacted in Germany, Bavaria, Prussia, England, Austria, Hungary, Belgium, France, Italy, the Turin municipal bye-law, Portugal, municipal law of Lisbon, Roumania, Servia, Sweden, Norway, the separate laws of the twenty-two cantons of Switzerland, and of Canada. The list, it will be seen, is not complete; from Russia, notably, in consequence of complex local legislation, nothing could be obtained. Still, the material collected is international enough, at least for a beginning. It demonstrates, unfortunately, a considerable inequality of the law in different countries; but, on the other hand, it also shows a general desire to cope with the evil. The first great difficulty is the definition of terms. "Falsification" or "adulteration" is defined in so many ways that, till all parties can agree to give, in all languages, the same meaning to the same word, it will be impossible to proceed in a uniform manner against the abuse the word represents. Nevertheless, and however great the obstacles may be, the problem has to be faced. As we consent to increase the facilities of international intercourse, and are ever seeking to interchange the products of different countries, we can no longer remain indifferent as to the laws enforced by our neighbours. If we eat American ham and French butter, we want to know what method of *surveillance* is adopted in those countries to protect us from trichinosis in the former, or from injurious colouring matter in the latter. If we export cotton goods and other wearing apparel, foreign nations have a right to inquire what measures we take to prevent the colouring of these tissues with materials that may produce irritation, and sometimes serious disorders of the skin. M. Brouardel's paper was

followed by papers from Professor Gabriel Pouchet, of Paris, Dr. Angelo Caro, of Madrid, Dr. Ferrière, of Switzerland, Dr. A. Hilger, of Erlangen, and Dr. Hamel Roos, of Amsterdam. The cause is therefore well before Europe; and doubtless many opportunities will arise of dealing with the details, as from day to day various grievances are brought to light.

THE LANCET, Nov. 5, 1887.

WITH a military band on board, and the ship gaily decked with flags, early on the Monday morning 400 members of the International Congress of Hygiene sailed down the Danube for Buda-Pesth. Some 300 more, for whom room could not be found on board, proceeded to the Hungarian capital by train. The large river steamer, with its saloons, its dining accommodation, and its spacious deck, gave the best opportunities for the exchange of ideas, of news, and of criticisms; and the long journey to Buda-Pesth must have greatly contributed to facilitate mutual understanding between sanitary reformers of all countries. Presburg was the first Hungarian town reached; and here the entire population turned out to welcome the Congress. The broad enbankment was lined with dense crowds of people; from masts, balconies, and the roofs of the houses floated innumerable flags; on the pier the mayor and municipality awaited to present an address of welcome. It was a brilliant and invigorating sight. In a few minutes, however, the steamer started again, followed far by the re-echoing cry of *élien* (the Hungarian "hurrah"). Though it was close upon 11 o'clock when we reached Buda-Pesth, the mayor and municipality here also were present to greet the members of the Congress with speeches of suitable brevity. A most elaborate programme had been drawn up for the next three days' proceedings, and the wearied members of the Congress were anxious to snatch a few hours' rest. At 7 o'clock next morning the Congress was to meet, so as to visit the Veterinary School and the School of Physiology before 10 o'clock. Both these institutions were greatly admired, the English members expressing themselves in particularly complimentary terms with respect to the Hungarian Veterinary School. The Chemical Laboratory, constructed in simple Italian Renaissance style, cost, taking the florin at its nominal value, £36,613, and the Physiological Institute, £41,133. Here, in the rooms for experiments, 200 students can be easily seated; while, covering a superficial area of 2095 square metres, and costing £43,200, there is the School of Mineralogy, Anthropology, Geology, and Botany; and, finally, a library that cost £27,500. All these buildings form but one group, and are conveniently near each other.

Before further describing the great educational and scientific work accomplished at Buda-Pesth, it should be remarked that in 1780 the town had only 23,000 inhabitants. In 1867, while Hungary was still under the domination of Austria, the population of the capital was 183,360; but since Hungary gained its independence, the pro

gress has been so rapid that the population of the capital is now estimated at 450,000, and since 1867 the State has spent no less than £7,000,000 in public works at Buda-Pesth. At 10 o'clock, according to appointment, the members of the Congress, who filled a long line of tramcars, arrived at the Ullö Street Clinical Hospital and School, a magnificent and luxurious building, which cost £42,800. The adjoining Anatomical Institute by itself cost £32,000. These structures were much admired. Though there was scarcely time to make a technical examination, this much at least can be said—namely, that the drainage seemed in proper order, and was infinitely superior to what is generally seen on the Continent. At 11 o'clock the Stefánia, or children's hospital, was inspected, as also the isolation pavilion for infectious cases. The members of the Congress now went on board a steamer and proceeded to the St. Marguerite Island, which is the great pleasure resort of the inhabitants of Buda-Pesth. Here, among trees and flowers, the municipality had prepared a splendid dinner-lunch. A band was in attendance, which played the national hymns of the principal nationalities present, and was answered by cheers from the different representatives. The ladies received presents of flowers and the gentlemen bunches of cigars and cigarettes tied up with ribbons in the colours of Buda-Pesth. Each delegate had also a decoration for his button-hole, bearing the arms of Hungary and the colours of Buda-Pesth, which proved of considerable practical service, as all the members of the Congress were at once recognised by the drivers of the carriages, tramcars, or the guards of the railways specially retained for the use of the Congress; everyone in the town was ready to help or guide those who wore this emblem.

The speeches were of a thoroughly international character. The prefect, M. Charles Rath, in his opening allocution of welcome, declared that the town of Buda-Pesth would make the greatest efforts to forward scientific progress, and to carry out the wise counsel given by the Congress. M. Kamermayer, the mayor, drank to Herren Ludvigh, the acting President of the Congress. Speeches now followed in rapid succession, but the allocution delivered by M. Sasvári was the most striking illustration of internationalism. He commenced in Magyar, and, after a few complimentary words to his Hungarian colleagues, assured the Austrian and German guests—himself speaking in good German—that the Hungarians recognised how much their civilisation was due to the Germanic races. Then, speaking in French, he explained that Hungary admired the great French nation, which, marching in the vanguard of progress, had given to the world the highest and most generous ideas. Now, changing from French to Italian, he spoke of the glories of ancient Rome, to be revived at no distant date. Finally, concluding in fluent English, he greeted the brave children of Great Britain, who had borne the banner of civilisation to the uttermost regions of the globe. Here the speech seemed ended, but, recognising among the delegates the dignified features and high turban of the Mahomedan Burgo-

master of Serajevo, he again rose, and, in the Servian-Croatian language, hailed the presence of this Oriental functionary as typifying the union of the East and the West for the furtherance of the cause of hygiene. Dr. Roth, in Magyar, and Mr. Adolphe Smith, in French, spoke for England.

In the afternoon, the Congress visited the new hospital, consisting of seventeen pavilions and holding 720 beds, and the model slaughter-house for the town of Pesth. At the latter establishment, 236,000 head of cattle are killed during the course of the year. It should be noted, however, that the consumption of poultry is nearly as large as that of ordinary meat.

In spite of these admirable institutions and the magnificent broad thoroughfares, the death-rate of Buda-Pesth is exceptionally high; it amounts to 29 per 1000. This, it is said, is in a great measure due to the fact that 25,000 people still live in cellars. The police have made vain efforts to drive the people out of these unwholesome abodes. The underground dwellings have one advantage, that of being cooler in summer and warmer in winter. The town drains directly into sewers, and these have their outfall into the Danube. The supply of drinking water is taken from the Danube. In spite of the great size of this river and the filtering process to which the water is subjected, this cannot be considered satisfactory, and probably also contributes to the high death-rate.

During the evening the greater part of the members of the Congress went to the Opera, which is a model of comfort. There is no crowding, and even in the cheapest places the seats are as large and easy of access as the stalls of an ordinary London theatre. The ventilation was therefore much easier to maintain.

On the following morning the members of the Congress had again to bestir themselves early. The common rendezvous was for 8 o'clock, and a special steamer took us over to Buda to examine the magnificent Turkish baths, the Rudas-Fürdo, for which the town is justly celebrated. We then proceeded again by steamer to Promontor, formerly a Roman settlement, and where the vast caves of Mr. Saxlehner are cut out of the chalk formation several hundred yards deep into a mountain. In this weird place, beautifully illuminated by candles, a luncheon was served on barrels of wine. Caviare, or *pâté de foie gras*, and the excellent wines of the country were consumed with a recklessness that was, perhaps, not in keeping with the laws of hygiene, but which was the best response to so hearty a reception. On leaving these caves, innumerable carriages were in waiting to convey the members of the Congress over vine-clad hills to the spot where, from seventy wells, the celebrated Hunyadi János waters are collected. This vast establishment was carefully inspected. The waters are mixed so as to maintain them always at the same degree of strength. This is done in two reservoirs holding altogether 100,000 litres. From these the bottle-filling machines are supplied. These receive from each side a tray loaded with twenty-five bottles. In a moment the water drops into the bottles without any being

spilt. These waters were discovered in 1863, but it was not till they were analysed by Baron Liebig that they acquired the wide reputation they now enjoy. The waters were then named after the Hungarian patriot, Hunyadi János, who in the fifteenth century defeated the Turks, and whose son Matthias was elected King of Hungary out of gratitude for his father's services. Some persons have stated that the name was meant to describe the waters; it simply recalls a hero whose memory is dear to all Hungarians. The works once examined, some 700 persons sat down to a most magnificent feast, while one of the best Austrian military bands played outside the dining pavilion. After a few words of welcome from M. Saxlehner, the proprietor of the waters, Professor Ludwig, President of the Congress, returned thanks for the hospitality received, and acknowledged the importance of the establishment. M. Jarchow explained that it had always been the proprietor's wish to have an opportunity, such as had now fortunately presented itself, of showing to so many members of the medical profession that no effort would be wanting on his part to warmly acknowledge the support he had received at their hands. Professor Schmidt, in proposing "The Ladies," made a happy reference to the fact that the springs had been discovered by a lady. Dr. Busback, the member for Buda-Pesth in the Hungarian Parliament, Professor Acglave for France, Professor Corradi for Italy, also spoke; and Professor Frankland, who, as one of our best authorities on water, had visited the springs with much interest, responded in the name of England. He said every effort would be made to give the Congress a worthy reception when it met in London; but, in acknowledging the proverbial hospitality of Hungary, he was obliged to confess they would not surpass in England the entertainment they had received that day.

It was now soon time to start again, for the vast establishments of the Red Cross Society at Buda had to be seen. Here the Congress was received by Dr. Emerich Ivanka, the director, and the lady patroness, Countess Livia Zichy, and Madame Bischitz. There are altogether twenty-three buildings belonging to the Buda-Pesth branch of the Red Cross Society. In the event of a war, there would be room for 800 wounded on these premises. Now they contain, among other things, 180 ambulance waggons, including some that served in the recent Servian war. Also there are 200 beds, packed and ready to be loaded on 32 waggons, with all the medical, surgical, and cooking appliances necessary, so as to establish at a moment's notice a hospital in any part of the country. The English delegates, and notably Dr. Mumby from Portsmouth, were much impressed by the preparedness of this establishment. Fears were expressed that in England we should not be so ready to meet an emergency. From this point some members of the Congress went to visit the lunatic asylum at Lipótmezö, while others hastened to their hotel to dress for the banquet given that evening by the Hungarian Society of Hygiene. This was the third banquet given on one and the same day.

The Hungarian Society of Hygiene was only founded in October

1886, and yet it already counts more than 2000 members. There are three sorts of membership: mere adherents, who pay one florin per year and have no right to vote; full members, who subscribe annually three florins; and life members, who pay fifty florins. The society issues a paper, the *Egészség*, which, being translated, means *Health*. There are 200 life members, and out of this number 105 were enrolled by the acting and active president, Dr. Markusovsfky. A few ladies also are members, and the society gives lectures, distributes literature, brings pressure to bear with respect to vaccination, &c. The banquet they had provided was most elegantly served. It called forth many eloquent speeches, delivered in a great and perplexing variety of languages, and was followed by a ball that lasted until the small hours. Yet the next morning a little after 8 o'clock, the members of the Congress had to meet at a far distant station, where, in a special train, they were conveyed to Moha, three hours' distance from Buda-Pesth. Here are situated the celebrated Agnes Springs, which provide a very pleasant sparkling dinner water. The heartiest welcome was extended to the members of the Congress, and a good dinner was, as usual, followed by many good and enthusiastic speeches. Mr. Charles Barshall, of the *Revue de l'Orient*, an influential paper published in French at Buda-Pesth, proposed "The Foreign Press," coupling the *Lancet* with the toast. He insisted that science had been the father of freedom, and that the present Congress seemed to indicate it would become the parent of peace. The aristocracy of intellect, from thirty different nationalities, had worked in common at the Congress to secure the health and the happiness of mankind. Such harmonious international effort would not only benefit the cause of hygiene; it engendered the hope of general peace. Mr. Adolphe Smith replied for the foreign Press, which had always sympathised with the struggles of Hungary. Hygienists loved free air and free water, plenty of both to secure cleanliness and health, whence sprang reason, and with reason knowledge and freedom, the basis on which science was founded. He therefore begged to return the compliment, and drink to the free Press of Hungary. Dr. Frankland also spoke in very suitable terms, and when the banquet was over the girls employed in bottling the St. Agnes waters came forward, in their peculiar, neat, but simple dresses, and danced the various dances of the Hungarian peasantry. The greatest animation prevailed, and everyone joined heartily in the amusements of this rural fête till it was time to join the train and return to Buda-Pesth. Thus the Congress came to an end. That same evening and the next morning the members all left, and were scattered once more to all points of the compass. To everyone the memory of the hearty reception afforded will be cherished with feelings of pleasure and gratitude. Much has been learnt, and there was much to enjoy. But the best way of showing our high appreciation of what has been done at Vienna and at Buda-Pesth, is to prepare at once for the organisation of the London Congress, so that it may at least be worthy of the precedent triumphantly established in Austro-Hungary.

THE PARIS, 1889,

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE LANCET, Aug. 3, 1889.

ON Sunday, August 4th, at the Grand Amphitheatre of the Faculty of Medicine, and under the presidency of the Minister of the Interior, the International Congress of Hygiene and Demography will, with due solemnity, hold its inaugural sitting. It will be remembered that, though at the last Congress, held two years ago at Vienna, it was decided that the next should take place in London, in 1891, that distant date was selected especially so as to permit an intermediary gathering at Paris during the Universal Exhibition. Though the present Congress does not partake of the same official character as the great Congress of Vienna and the future Congress of London, nevertheless several Governments will be officially represented. These are the Governments of Belgium, Brazil, Bolivia, Denmark, Egypt, Luxembourg, Monaco, Salvador, Spain, Roumania, Mexico, Turkey, the Argentine Republic, Paraguay, and Hawaii. All the French sanitary societies, Administrations, central and provincial, and many foreign Administrations, send representatives. There will not be far short of 600 members, representing about twenty-five nationalities. The Congress is to meet at 9 A.M. and 2 P.M. each day, excepting Wednesday, Aug. 7th, when, by special train, the members will be conveyed to Rheims, a distance of 172 kilometres from Paris. At Rheims carriages will take the excursionists to the sewage farms, and after visiting the works the members will be entertained at lunch in the Château des Maretz. On returning to Rheims, the celebrated cathedral and equally celebrated champaign caves will be visited. Then the Congress is to be entertained by the Municipality at the Town Hall, and finally a special train is to bring the entire company back to Paris by 10 P.M. On the Monday evening the Congress will be received at the Ministry of Public Instruction, and on Tuesday by Dr. Brouardel, President of the Congress and Dean of the Faculty of Medicine. On Thursday evening the Congress will be entertained by the Paris municipality at the Hotel de Ville. On Friday evening the Congress will hold a banquet on the platform of the Eiffel Tower. On the Saturday there is to be a reception given by the Minister of the Interior, and on Sunday, Aug. 11th, a visit

to the Paris sewers and an excursion to the sewage farm of Gennevillier, conducted by M. Bechmann, chief engineer of the town of Paris. Ladies accompanying members of the Congress are especially invited to all these excursions and entertainments, and it will be seen that the programme is very complete. It is only to be regretted that in Paris, as in Vienna, there are not likely to be many English representatives. Professor Corfield, Mr. Shirley Murphy, Dr. Alfred Carpenter, Dr. C. Drysdale, and Mr. Adolphe Smith are among the English members of the Congress, and it is to be hoped that at the last moment many more will put in an appearance so as to participate in the great work of sanitary propaganda achieved by these Congresses. The Congress will divide into eight Sections, to treat the following subjects:—Section 1: The hygiene of childhood, milk-supply, overwork in schools, &c. Section 2: Town and rural sanitation, construction of dwellings, ventilation, overcrowding, &c. Section 3: The germ theory applied to hygiene, infectious fevers, &c. Section 4: Industrial and professional hygiene, work of children in factories, unwholesome industries, &c. Section 5: International hygiene and sanitary police. Section 6: Food adulteration; water-supply; filtering processes. Section 7: Demography; sanitary statistics. Section 8: Cremation. This latter section will in a measure constitute a separate Congress of itself, and will be presided over by the President of the International Commission on Cremation. On each of the eight subjects printed reports are to be placed in the hands of the members of the Congress to serve as a basis of discussion. The reports for Section 3 and Section 7 are already in circulation. Such are the principal details concerning this important international meeting. It will be seen that the French authorities have spared no pains to provide agreeable and instructive entertainment for those who respond to their invitation, that the subjects to be discussed are most important, that the Governments of newer civilisations (such as the South American Republics) are anxious to gain every possible information, and that therefore the English sanitary reformers, who have so often led in the van of progress, should be present in large numbers on this occasion. It is not too late to give notice of an intention to take part in the proceedings of the Congress. The entrance fee is 20 francs, and communications should be sent at once to the secretary of the International Congress of Hygiene at the Faculté de Médecine, Paris. All who are concerned in hygiene, as medical men, engineers, architects, inspectors, administrators, municipal councillors, &c., will be welcomed.

THE LANCET, Aug. 10, 1889.

THERE are so many Congresses now sitting in Paris that it is physically impossible to follow them all. Last week we had the Congresses on Alcohol, on Poor Relief, and on Therapeutics. This week we have the Congresses on Mental Medicine, on the Amelioration of the Condition of the Blind, on

Zoology, and on Hygiene and Demography. The last-named is undoubtedly the most important of all these gatherings. Its labours were inaugurated on Aug. 4th, and there were at that time 662 members, of whom 134 were foreigners, and represented 28 different nationalities. Among the latter there were 10 English, 10 Italians, 14 Russians, 6 Roumanians, 8 Spaniards, 4 Swiss, and 22 delegates from the North and South American continents. Further, it is to be noted as a gratifying symptom that the various municipalities, almost all the municipalities of the large towns of France, have sent special delegates. The opening ceremony took place in the large Amphitheatre of the Ecole de Médecine, which was gracefully decorated with drapery and flowers for the occasion. The Congress is held under the honorary presidency of the Minister of the Interior, and Dr. Brouardel occupied the chair. Dr. Chantemps, president of the Paris Muncipal Council, and Sir Douglas Galton sat on either side of the chairman. The platform was crowded with the representatives of different nationalities, and the large amphitheatre was completely filled by the members of the Congress. A considerable number of ladies, many of them members of the Congress, also assisted. Dr. Brouardel, who was warmly greeted when he rose to speak, related how within thirteen years French hygienists had been received abroad five times—at Brussels, Turin, Geneva, the Hague, and Vienna. All had retained an ineffaceable souvenir of these great meetings, and he hoped that at our present Congress and on the pacific field of hygienic study fresh victories would be achieved. Alluding to the Faculty of Medicine, where the Congress met, he spoke on the immense changes that had been brought about. Here it was that medical men had struggled against barber-surgeons, and had sought to maintain the exclusiveness of their profession. Yet here it was to-day that medical men welcomed engineers, chemists, architects, public administrators; and not only welcomed them, but were even anxious to consult them and to follow their advice. Not only was this a mighty change, but it was precisely this that constituted their principal force. It was because hygiene united so many different professions that it had acquired so much strength and popularity. Hygiene had swept away the old ramparts that had kept various professions apart, and it would also help to unite different nationalities. The discussions, which were formerly restricted to the academies, had now invaded the Parliaments, and "the President of the French Republic, justly inspired by the interests of the democracy, of which he was the highest and the most respected representative, had inscribed reform in the sanitary services among those reforms which must receive the first attention of the Legislature." This announcement was received with loud applause. Dr. Brouardel then proceeded to describe the difficulties of the Legislature when sanitary measures were proposed, as they almost invariably interfered with some vested interests. These interests soon organised resistance against the proposed reform. The expense and difficulty of reform was a certainty, while the danger

to be avoided was often unrecognised or doubtfnl in the mind of the public. Then there was always some doctor or other who supported the old ideas, and thus strengthened the reaction. The Governments were often sorely perplexed. But such Congresses as the present armed the sanitary reformers with an expression of competent opinion which no Administration could afford to discard. Dr. Brouardel then described some of the progress already achieved, and concluded by rendering homage to Dr. Napias and Dr. Martin, who had so ably organised the Congress, and the younger secretaries who had assisted. Paraphrasing the "Marseillaise," he said: "Vous entrez dans la carrière lorsque vos aînées y sont encore." Our generation has forged the arms; it is for the next generation to use them.

Sir Douglas Galton was then called upon to speak, and, in the name of Professor Corfield, Mr. Shirley Murphy, and the other English delegates, thanked the Congress for the reception given them, and for the honourable position he (Sir Douglas Galton) occupied at the presidential table. He regretted deeply the absence of his eminent colleague, Sir Edwin Chadwick. Dr. Alfred Carpenter had once remarked that the influence of a sanitary inspector in preserving the health of a community depended on the degree of education of that community concerning the laws of hygiene. The mission of the English sanitary societies represented at this Congress was to spread the knowledge of hygiene at home and abroad. In Paris especially they were called upon to admire the progress made, and envy the intelligent manner in which the principles of hygiene were applied to daily life. The next Congress, it had been decided, would be held in London. They would do their best to show their foreign visitors how in England sanitary principles were practically applied. He hoped the French hygienists would attend in large numbers, and promised them a hearty welcome in London.

Senator Dr. Pacchiotti, on behalf of Italy, delivered an eloquent oration. He dwelt on the delight of the foreign delegates when invited to visit the country which had done so much for humanity, and which to-day had organised a universal exhibition that was the marvel of the world. He described how Italy, enlightened by the example of France, had created at the Ministry of the Interior a service of hygiene. This consisted of a director of hygiene, a medical man, and a committee of hygiene, organised under the Minister of the Interior at Rome. These watch over the public health of the entire kingdom, while at each provincial prefecture there was a similar director of hygiene aided by a committee to watch over local interests, and to communicate with the central bureau at Rome. Dr. Pacchiotti then, in warm, glowing language, showed how Italy and France, as two sisters, had progressed hand in hand, how the works of M. Pasteur, of Emile Trélat, and of Durand-Claye had been appreciated in Italy, and how many Italian municipalities had imitated the example of Paris in creating a municipal laboratory for the prevention of the adulteration of food. In the future, as in the past, France and Italy would continue to struggle

for freedom, for civilisation, home, country, and humanity. This speech, which was ornamented by many flowers of rhetoric, was very enthusiastically applauded.

Senator Dr. Crocq, official delegate of the Belgian Government, related what had been done in Belgium to organise the sanitary services, and maintained that it was the duty of every Government, whatever its origin and form, to forward the interests of the people, and the first of these interests was the preservation of their health. For this purpose private interest, if necessary, must be sacrificed. A healthy people cost less and produced more. The question was an international one, for with the modern and rapid means of communication and exchange one nation was sure to suffer from the neglect of sanitary matters by a neighbouring nation. He therefore congratulated the Congress on its international character, and on having met in France, the land of freedom, and in Paris, the capital of progress.

Dr. W. Dexterery, delegate of the Russian Society of Public Hygiene, briefly but warmly expressed the sympathy of Russian sanitary reformers with the French nation and the efforts of French hygienists. He was greeted with applause of a very special and marked character.

Dr. Felix, of Bucharest, rendered homage to the great sanitary reformers whom he had met in Paris at the Congress of 1878, and who were now dead; mentioning the names of Bouchardat, Gübler, Fauvel, Durand-Claye, Lionville, Paul Bert, Würtz, and Tardieu. He closed by a graceful compliment to the President of the Republic, M. Carnot, and the President of the Congress, Dr. Brouardel.

Señor M. Belmas, on behalf of the Spanish delegation, described the progress achieved in Spain and the decrease of the death-rate in that country. He showed that a system of sanitary administration was being organised on the French model, and that those countries, late in reform, might ultimately become the healthiest, through the adoption of the most recent and perfected methods.

Dr. Chantemps insisted that a reduction in mortality always followed on the rigorous application of sanitary measures. As administrators, they had come to the Congress to learn. In the study of hygiene, a sentiment of generous solidarity united the representatives of every nation, and nowhere were words of international fraternity more welcome than at an international sanitary congress.

Dr. Napias, as secretary of the Congress, read a lengthy report on its organisation, containing the facts and statistics as to the Congress already given. He concluded by expressing his thanks for the active support the cause and the Congress had received at the hands of the Press, and especially the representatives of foreign scientific journals.

Dr. Chantemps having felicitated the Congress on the presence of so many ladies, Dr. Roth urged that the Ladies' Sanitary Association was the first society of the sort that been formed, and then the

Congress adjourned to other apartments, where refreshments were served, and many friendly acquaintances renewed.

On Monday morning the various Sections of the Congress met, and several resolutions were adopted. In the First Section there was an important discussion on measures that should be taken in schools to prevent the spread of phthisis by the sputa of youths suffering from tuberculosis. Dr. Jablonski, a Russian delegate, would exclude every pupil who might be suspected of tuberculosis, but this proposal found no support whatsoever from the members of the Congress. Dr. Felix, of Bucharest, energetically urged that when there was abundant expectoration and no doubts entertained as to the nature of the malady, then the young person—for this would rarely apply to little children—should be excluded from school. There could be no doubt that the sputa were a cause of infection; and therefore the education of one child had better be sacrificed instead of endangering the health of a whole school. Dr. C. Drysdale urged that the question was too wide in its bearings to justify the Congress in jumping at a conclusion. Personally, he had twenty years' experience of hospital treatment of phthisis, and had failed to remark that the nurses and other attendants contracted tuberculosis; and they were far more exposed to the contagion than school children, even if one or two among the latter were in an advanced stage of consumption. Other speakers protested against the danger of spreading unnecessary alarm, urging that cases where "suspicion" only existed should be subject to confidential communications between the school and the family doctor. Suggestions were also thrown out as to the necessity of providing spittoons, and preventing children soiling the floors of schools; but these were very generally considered impracticable. Finally, the Section adopted the following resolution:—"That children who undoubtedly are suffering from pulmonary tuberculosis may render the adoption of measures prescribed by the authorised medical attendant necessary for the preservation of the health of the school." Practically, the question is left to the discretion of the school doctor, who may take measures, such as the exclusion of the pupil, when he thinks there is a real risk of contagion.

In the afternoon an important discussion took place in Section 5 on the report presented by Dr. Proust, inspector-general of the sanitary services, on Sanitary Works in Seaport Towns. The report concluded:—"(1) That it was the strict duty of Governments and municipalities to render ports healthy; (2) that sanitary works for seaport towns were more necessary than for other towns; (3) that it was only when such sanitary works had been accomplished that any notable reduction in the death-rate and zymotic death-rate would take place; (4) that it was only when the ports presented a soil unsuitable for the penetration of morbid exotic germs that the last quarantine checks could be abolished." The discussion was limited to the first two clauses. No speaker made any allusion whatsoever to the question of quarantine. A very mild discussion was held as to whether the State, the municipality, or the chambers of

commerce could best secure the application of the necessary sanitary measures, and then the vote was taken, and a favourable decision unanimously given. The chairman now rose to vacate the chair, but Mr. Adolphe Smith protested that, in common with many others, he had only voted in favour of the first two or three clauses of the resolution, and did not understand that the question of quarantines had yet come before the Section. Most of the delegates had, however, already risen to leave. A confused conversation followed, and it was understood that the question would be re-opened on another occasion. The last clause of the resolution practically means that quarantines should be imposed everywhere, for what port is there in the world where it is possible to declare that the soil is absolutely incapable of harbouring the germ of an imported disease? This is evidently a subject which the Congress must more carefully discuss.

In the afternoon Section 1 debated the able and interesting report of Dr. Landouzy and Dr. H. Napias on the Best Means of Protecting the Health of Children. Dr. Desmoulin, of Ghent, said that whereas the mortality among rich children ranged from 10 to 20 per cent., that of the poor varied from 30 to 60 per cent. At Ghent the children working in factories, from the age of eleven, showed terrible signs of physical degeneration. He urged that mothers should receive such help as would enable them to leave the mill at the period of childbirth. Many of the speakers denounced poverty as the principal cause of a high rate of mortality, but several delegates were afraid that by restricting the work of children this poverty would be increased. Mr. Adolphe Smith, on the contrary, pointed out that it was precisely the competition of the work of women and children that reduced the scale of wages. The British coal-miner was better paid than the Belgian miner; but in Belgium the women and children worked below ground in the coal-mine. The discussion was ultimately adjourned.

On Tuesday morning the report of the French Government Commission on Unwholesome Dwellings was discussed at great length. The conclusions of M. Hudelo, the reporter, were combated in a report drawn up by M. Jourdan. The principle at stake was whether the Commission on Unwholesome Dwellings could deal with the question, or whether, as proposed by M. Jourdan, special salaried inspectors should be appointed to inspect houses and insist on sanitary improvements. The Commissions of Insalubrious Dwellings had rendered great service. At Bordeaux, for instance, they had visited 1800 houses in one year. Would a paid agent have the same moral influence? The commissions were composed of doctors, architects, and engineers, who received no remuneration, and whose opinion was therefore respected. Householders would be more likely to contest the decisions of a mere paid inspector. M. Jourdan insisted that the commissions which had done good work existed only in large towns, and could not be created in smaller districts. Dr. Pacchiotti remarked that, as two sanitary laws were now before the French Parliament, it would be better to wait till their fate was decided.

An American delegate related that paid sanitary inspectors in America did their work well; while Mr. Adolphe Smith also alluded to the work done by the sanitary inspectors in England acting under the medical officers of health. The difficulty in France was not to discover insanitary houses, but to find a wholesome dwelling. According to the admirable charts shown at the Exhibition by M. Masson, there were not 2000 sanitary houses in Paris, but about 96,000 insanitary houses. A large handsome room did not make a healthy house. Every house with soil-pipes untrapped was unhealthy. It was first necessary to decide what constituted a healthy house. This had been done in Brussels, but not in France.

Dr. Janssens, chief of the Brussels Sanitary Bureau, then explained how, by applying the French law of 1789 and 1790, immense progress had been achieved, and the death-rate reduced from 30 to 22 per 1000. Any complaint led to an inspection, and on report of inspectors the mayor ordered the necessary improvements. If these were not at once executed, the house was declared unfit for human habitation, emptied, and closed. The tenants then prosecuted the landlord, and claimed damages for disturbance; consequently, the landlords now always and promptly carried out the improvements ordered by the mayor at the suggestion of the sanitary inspectors and bureau. The Congress ultimately unanimously decided that the French law of April 13th, 1850, on unwholesome districts, should be revised. This revision was in the sense of rendering the appointment of commissions on insalubrious districts obligatory throughout France. Some delegates, preferring M. Jourdan's proposal, voted against this, but it was carried. Another resolution was adopted unanimously, raising the cubic space per inhabitant from fourteen to sixteen cubic metres, and a final resolution in favour of establishing sanitary bureaux in all towns was approved.

In the afternoon of Tuesday Section 5 discussed the treatment and removal of domestic refuse—what in England is familiarly known as the dust-bin nuisance, but in France is called *la boîte à Poubelle*. The discussion in the main was very French in character. Thus it was shown that, in Paris, where there was little or no cinder, but, on the contrary, a larger quantity of vegetable refuse, the town refuse was worth from 3f. 50c. to 4f. the cubic metre. The reporter on the question, M. Dumesnil, insisted principally on the method for the removal of the refuse, and the resolution carried was to the effect, "That domestic or kitchen refuse should be placed in a metal box or case, which was to be kept clean and disinfected; that it was desirable that the box or case destined to receive the refuse of the entire house should be placed at the disposal of all the tenants in the evening; should be kept in a part of the building where there was a plentiful supply of air; should be provided with a lid easily removed, and kept in a cellar or other place where there is a ventilating shaft." It will be seen that this latter part of the clause only applies to certain towns and houses. Another resolution, to the effect that all refuse should be put outside the dwellings before night

and removed daily, was a more sensible proposal to make at an International Congress, for it involved principles rather than details of execution, and was carried unanimously and without discussion. In the course of the afternoon it was remarked that in England the contractors were paid to remove the refuse, while in France profits were made. Mr. Shirley Murphy pointed out that the practice in different districts varied, and that it was impossible, without knowing every detail, to compare the one with the other; but where the cost of collection from the houses had to be borne by the contractor, he was paid in London large sums of money for this service. The principal new point raised was the question, often put, but never satisfactorily answered, whether house refuse could be partially dried and then packed under strong hydraulic or other pressure. Thus reduced in bulk, partially dried (that is, lessened in weight), it would cost much less to transport to distant agricultural districts, where a more ready market would be found.

To-morrow, at 7 A.M., the whole Congress proceeds to Rheims, and the next sitting will be held on Thursday.

THE LANCET, Aug. 17, 1889.

ON Wednesday, Aug. 7th, as announced in a previous letter, the members of the Congress were up betimes, so as to catch the special train destined to take them to Rheims. After a three hours' journey we reached the historic town. A number of brakes, vans, and carriages were waiting at the station, and we were conveyed some distance out of Rheims to view the sewage farm. This is quite a new institution, and only commenced to receive the sewage some four months ago. The town possesses 150 hectares, but can dispose, for irrigation purposes, of 500 hectares. This is amply sufficient, and when there is a storm, or when by some other cause there is more sewage than the soil under cultivation requires, the water may be thrown on some waste land. Thus the danger of flooding the ground is obviated, and underground drains are not required. There is a pumping station to send some of the water up to the higher grounds, which reach an altitude of twenty metres. Unfortunately, the chief utility of this sewage farm is to prevent the contamination of the river. It does not in any way solve the drainage problem. Rheims still drains into cesspools; the town has not water enough for water-closets, but when the water-supply has been increased, then the existence of this sewage farm will enable the town to drain direct into its sewers. After duly investigating all these facts, the Congress was entertained at lunch at the Château des Maretz, which belongs to the company that has undertaken the management of the sewage farm. The lunch was served in a magnificent avenue of trees. Of course, there were some excellent speeches, notably by the director of the company, the prefect of police, the Mayor of Rheims, Dr. Napias on behalf of the French, and Mr. Adolphe Smith, who was

specially requested to return thanks by the Swiss, Turkish, Russian, American, and English delegations. Madame A. Tkatcheff, doctor in medicine, spoke for the ladies, and the utmost enthusiasm prevailed. The Congress then visited the cathedral, the Pommery champagne cellars, and were again entertained, this time by the municipality of Rheims, at a second lunch given in the Town Hall. Here more speeches were delivered. Those who participated in this pleasant journey will recognise that the study of serious subjects does not interfere with the spirit of mirth and the sense of enjoyment.

On the following day, Thursday, the Congress set to work again in good earnest. In Section 1, M. Delvaille (Bayonne) urged that the medical inspection of schools, as prescribed by the law of 1886, should be more rigorously applied, and that medical officers should be appointed for this purpose. Dr. Sevestre, of the Paris pauper children's hospital, urged that it was in its earliest manifestation that measles was most contagious, and that children suspected of this complaint should be kept away, but that the convalescents might be allowed to return earlier than was at present the custom. Dr. Layet (Bordeaux) related that, by exceptional severity towards the "suspect," they had avoided the necessity of closing schools, while Dr. Rochard insisted that the school teachers must be instructed in these matters. It was no use relying exclusively on the medical profession, for there were 28,000 communes in France which had no doctor. With regard to short-sightedness in schools, Dr. Motais (Angers) gave the results of investigation on 6700 children. He found that short-sightedness was much more frequent in Germany than in France, but that it was growing to an alarming extent in France. He was anxious to see the course of studies varied, and children prevented from looking for too long a period at some near object.

In Section 5, Dr. Alméras (Mentone) read a paper on the Contagion of Consumption, in which he complained that delicate persons were afraid to visit winter resorts for fear of contracting phthisis. He, therefore, asked that hotel-keepers should take rigorous measures to disinfect rooms which have been occupied by consumptive patients. At the present time hotel-keepers generally charged £12 in case of death, under the pretext that the room had to be purified; but it was rarely, if ever, properly disinfected. He proposed that the ceiling, walls, &c., should be submitted to a pulverisation with a sublimated solution containing 2 of mercury per 1000 of water and 12 in 1000 of tartaric acid. When this was dry, then the same place should be similarly sprayed with a 1 per cent. solution of carbonate of soda. This would convert the sublimate into insoluble salts. This service of disinfection should be managed in winter health resorts by representatives of the public authority, and hotel-keepers should receive written certificates from the municipalities that the work had been properly done. If this certificate could not be produced, strangers should refuse to hire the room or apartment.

Dr. de Valcour (Cannes) describes three cases of scarlet fever following upon each other in the same room of an hotel where disinfection had not been practised, and called upon Mr. Adolphe Smith to describe the English law on the subject. After the Congress had heard this explanation, Senator Dr. Pacchiotti related how a lady belonging to an aristocratic and influential family was taken away by the police from an Italian hotel (though she was in a very grave condition, and subsequently died), so that she should not infect the hotel with the small-pox she had contracted. The Italian law had armed medical men with sufficient powers to see that proper precautions were taken. Dr. Felix (Bucharest), on the contrary, was loth to ask too much from the State, and more anxious to so educate the people as to make them spontaneously and willingly take the precautions judged necessary. At Bucharest they had a disinfecting stove, and he was surprised to note how many persons came of their own accord and asked to use it. The declaration of infectious diseases was not obligatory in Roumania, but the police had ample powers over hotels. A Swiss delegate explained that only in some cantons was a notification of disease obligatory. Disinfection in towns was easy, but difficult in country districts, though there were epidemics in villages as well as in towns. The Section concluded that in each sanitary district a disinfecting service should be organised, and that the carding of bedding in the streets or squares of towns should be prevented.

Dr. Devillers brought forward a motion against fairs held in large towns. He related that in 1886, in the Belleville districts of Paris, small-pox broke out immediately after such a fair, and in houses that faced the street where it was held. This present year it had been noted that there were six times as many cases of scarlet fever near one of these fairs as in other parts of Paris. In some provincial towns similar observations had been made. Apart from epidemic diseases accidents sometimes occurred, and the noise was most distressing to many persons, especially to invalids. Some speakers objected, on the other hand, that the special tax levied on these booths provided money for the elementary schools; nevertheless, the Section voted that such fairs should be held in open spaces outside large towns, and not in the streets.

Dr. Martin now read a learned dissertation on the Condition of French Sanitary Legislation. He lamented that there was no law against infection. Theoretically, the mayors had considerable powers, but as they could not act without funds, and could not obtain funds without a vote from the municipal councils, their powers were rather nominal than real, especially in cases of emergency. Nor had the mayors received any support from the higher Courts of Appeal. For instance, during the cholera epidemic of 1885, the Mayor of Caen had suppressed a cesspool which caused a great nuisance and contaminated the subsoil. On appeal, the higher Court, while recognising that it might have been necessary to suppress the cesspool, decided that the mayor had no right to prescribe how this

should be done, but should have left the work to the discretion of the owner. Practically, if the sanitary authority had no right of supervision, it would mean that the work would not be done, or would be done badly. Again, at Toulon, during the cholera, a man refused to whitewash his room; the municipal authorities thereupon sent their agents to do the work. The owner appealed to the local police-court, and this Court approved the action of the municipality, but when taken up to the Court of Cassation, this tribunal refused to confirm the decision of the Toulon police magistrate. Municipalities, after such judgments, are afraid to act. The French penal code, it is true, gives the right to sue for damages, but to apply this in cases of contagion would be so unusual that no Court would grant a verdict. Yet there are laws in France that are very severe, especially against foreign epidemics, such as cholera, plague, yellow fever, and in some cases penalties of one year's imprisonment and even a sentence of death can be applied; but the utter lack of national feeling renders it impossible to apply the legislation that does exist. The French sanitary law has been justly described as the "freedom of suicide." But no one had a right to create such infection in his own house, as it was likely to travel to the houses of others. It was not always the landlord who was to blame. Often a tenant would hire a stable or coach-house and convert it into a dwelling. The text of the law was extremely vague. What constituted an unwholesome dwelling should be clearly defined, and not left to the discretion of judges, who very often were absolutely ignorant as to the rules of health. Many Courts by their verdicts had set forth that they did not consider a supply of water in a house a necessity. A high Court had condemned a local bye-law ordering that houses should be supplied with water as an attack against individual liberty. The best method of action and of punishment was for the sanitary authority itself to effect the required improvements and charge the owner with the cost. Only this must be done promptly. As matters now stood, legal decisions sometimes were obtained months after the nuisance had ceased to exist.

The discussion on this important subject was resumed in the afternoon sitting, when the difficulty of uniting the commissions of hygiene and similar bodies composed of men technically qualified to deal with such questions, but possessing at present only the right to give advice and no executive powers whatsoever, with the mayor, the prefect, or other authorities who could act, was very fully debated. The facts also that the mayor had to consider his electors, and if it was a fashionable resort he had to be very careful not to spread alarm, were obstacles to the stringent application of prophylactic measures. Two Bills had been before Parliament to create a sanitary law and a sanitary authority. The project presented by M. Siegfried was countersigned by no less than fifty Deputies belonging to all parties, and yet it had fallen through, such were the purely political pre-occupations of the National Assembly. Dr. Treille (Deputy of Constantine in the French Parliament) remarked

that as the sanitary services had been transferred from the Ministry of Commerce to the Ministry of the Interior, and were in the hands of a man on whom sanitary reformers might rely, we could look forward to considerable improvement. Parliament would not resist a project if its necessity was clearly demonstrated, but he would suggest that the Bill had better be first introduced into the Senate. Dr. Martin thought it was urgently necessary to alter the law of April 14th, 1850, which had rendered the law of 1789 inoperative. The Belgians, it had been seen, had availed themselves of the law of 1789, with the most admirable results so far as Brussels was concerned. Here 12,015 lives had been saved in fifteen years. Taking the one year 1886, there were 628 deaths less than the average. Estimating every life at the modest sum of 1000 francs, this represented a sum of 628,000 francs, and, as the Sanitary Bureau which had accomplished this result only cost 48,000 francs for the year, this was equal to an investment bearing an annual interest of 1400 per cent. On hearing these details the Section burst into loud applause, and Dr. Janssens, the chief of the Brussels Sanitary Bureau, had to rise over and over again to bow his acknowledgments. After a few more observations from different speakers the Section adjourned.

THE LANCET, Aug. 24, 1889.

THE International Congress of Hygiene, which has just terminated its bi-annual session in Paris, and has arranged to meet again two years hence in London, is an institution destined to exercise considerable influence on the Legislatures of civilised countries. Dr. Bourneville, Deputy to the French National Assembly, very frankly and openly declared that it was the sanction given to his proposals by the various International Congresses of Hygiene which enabled him to obtain from Parliament a law for utilising Paris sewage on the land. Madame Tkatcheff described new laws destined to protect the health of workers in Russia. These laws bear the date of 1882 and 1885. The first International Congress of Hygiene was held at Brussels in 1876. Who shall say how far the reports of M. le Baron de Suzor and other official and unofficial Russian delegates, who have regularly attended all these Congresses, may have contributed to bring about the enactment of those laws that will throw a gleam of health and joy on the dark picture drawn by Madame Tkatcheff of the high death-rate, the disease, degradation, immorality, and drunkenness prevailing among the working classes of Russia? How often has some local practitioner unknown to fame, some village pioneer in the cause of hygiene, fought and overcome local obstructiveness by describing in glowing terms the importance of these International Congresses, the immense number of delegates that attended, the variety of nations represented, and the State receptions provided by the Governments of the countries where the Congresses met. Then, when the desired impression is created, a

very big volume is produced. It is the official report of one of these Congresses; it contains a debate on the question at issue, and a resolution carried in the sense of the reform advocated. Will the village obstructives resist that which was approved by 678 delegates, representing the united wisdom of twenty-eight nationalities? But if such Congresses are useful as a means of encouraging national and local progress, their higher mission is to bring about international measures. With the frequency and rapidity of international intercourse the international assimilation of prophylactic precautions becomes more and more indispensable. For instance, a person is ill with small-pox or scarlet fever at Dover; his clothes and bedding are removed and carefully disinfected before he is allowed to go out and mix with other people. But twenty-one miles away, at Calais, a Frenchman is suffering from the same complaint; no disinfection is enforced, and after an hour's sail he can land at Dover, during his convalescence, without any precautions whatsoever having been taken. Evidently much greater security would exist if the same methods of disinfection, isolation, &c., were practised in both countries.

The fact that, in the face of such obvious reasons, England should for so long have remained inactive, and left to Belgium and France the honour of initiating the movement in favour of international sanitary reform, is a regrettable circumstance which we cannot satisfactorily or creditably explain. In any case, we have not neglected this important movement. From its infancy, from the Paris Congress of 1878, we have given the largest publicity to the various Congresses, and have protested over and over again that the number of English delegates attending was not in keeping with the importance of English progress in sanitation. With one single exception—the Turin Congress—and so as to increase the number and importance of the English delegation, we have sent our special correspondent to attend every Congress held; and to him are due the fullest descriptions written in the English language, and published in our columns, of the International Congresses of Paris (1878), of Geneva (1882), of the Hague (1884), of Vienna (1887), and of Paris again in 1889.

But, after all, it is of little use lamenting over the past. Our only desire is to show that, as a nation, in the comity of nations, we have lost ground in this respect; and that, therefore, we must, by some extraordinary effort, redeem our reputation and take up that leading position which, considering the progress of sanitation in England, we have a right to occupy. It seems that England is at last beginning to move in the matter, for the eighth—it should have been the first—International Congress of Hygiene will meet in London in the first week of August 1891. We must see that this Congress, though held so late in the history of the movement, shall be the best so far as its practical results are concerned. Anything short of best would be a moral disgrace for England. *Noblesse oblige;* and in the matter of Congresses—that is to say, of government by public opinion—England stands first among the great nations of the

world. We must organise the Congress in a manner worthy of a nation long accustomed to free institutions; and, if this is ably done, the Congress will differ very materially from its predecessors. We do not deny the utility of abstract theoretical discussions; there may be a little time to spare for such academic debate at the forthcoming Congress; but the greater part of the work should be confined to a distinct purpose, to the adoption of short pithy resolutions, that can be easily reproduced in every organ of publicity throughout the world, and which, by reason of this publicity, shall directly influence the Legislatures of the different countries. A lamentable feature in the recent Paris Congress was the absence of the lay Press. The medical journals in France have given lengthy reports of the Congress, and those who are technically concerned will be able to consult the voluminous official reports of the proceedings, which will be published in the course of a few months. But hygiene is essentially a popular question. It is of no use for medical men, engineers, and architects to agree as to certain principles of health unless the great mass of the people also understand these things—and, understanding, are willing to sanction their practical application within the privacy of their homes. The work of these Congresses, to be useful, must be essentially an educational work. From each Congress a series of short resolutions should proclaim to the world, in simple terms, some great principles of hygiene, and how these principles can be applied to all nations. This the Paris Congress has done, but in a somewhat confused and unsystematic manner. Also the professional men who met in Paris have been too much absorbed by professional considerations, too readily satisfied with publicity in professional organs, and have not thought enough of the outside public, on whom it was, above all, necessary to exercise an educational influence, and without whose votes and support but little can be done. Nevertheless, if there is thus still some room for improvement in the management of this international agitation, we gladly and without hesitation render all homage to the bold initiators who for so many years have worked to promote the movement. The French Society of Public Medicine and Professional Hygiene was the first to propose, in 1878, that these International Congresses should be a permanent institution, and should meet every two years. Since that date this society has rendered eminent service as an international link between sanitary reformers of all countries, and we cannot better conclude these remarks than by congratulating its two most active secretaries, Dr. Napias and Dr. Martin, on the very efficient and courteous manner in which they have helped to promote, on an international basis, the cause of sanitary progress.

THE LANCET, Aug. 24, 1889.

ON the 8th inst. the English delegates gathered in Section 5, in the hope that the question of quarantine would be re-opened. Dr. Proust, however, was absent, and, as he was the author of the report on the subject, it was thought advisable to await his arrival. The Section therefore proceeded to discuss the subject of vaccination. Dr. Villemin related that in the department of France where he lived vaccination was performed only once a year, and those who were not present on that occasion could not be vaccinated. A Mexican delegate spoke in favour of compulsory vaccination, and Dr. Treile lamented that, even in an intelligent centre like Paris, the population displayed the greatest indifference to the subject. He described how at Fribourg small-pox had reappeared since the abolition of compulsory vaccination in that town. An American delegate said that from time to time he instituted a house-to-house visitation, so as to know if all the inhabitants had been vaccinated. Dr. Arnoult, military inspector, claimed that to the army belonged the honour of having given the example to the French nation of the advantages that accrue from vaccination and re-vaccination. But their difficulty was to contend against the non-vaccinated civil population. In the Second Army Corps some soldiers under his care contracted small-pox at the Amiens Hospital. To avoid resistance he had sought to popularise vaccination from the calf. Dr. Proust, who by this time had arrived, said that the German army was only really exempt from small-pox when the civil population had been vaccinated and re-vaccinated. He preferred vaccination from the calf to the use of lymph from even the healthiest looking children. Dr. Felix said that in Roumania vaccination, but not re-vaccination, was obligatory. They had not succeeded, even with the aid of the law, in vaccinating everybody till vaccination from the calf was introduced; then the popular resistance ceased. Dr. Janssen said that in Belgium vaccination was not obligatory by law, but was insisted upon in every school, in every public service and institution, and was so admirably organised that there were very few Belgians who were not properly vaccinated. The subject was then allowed to drop.

Mr. Adolphe Smith, on behalf of the English delegates, now rose to inquire whether the inspector-general of the French sanitary services, Dr. Proust, understood that the Section had not adopted the fourth clause of the conclusions of the report on Sanitary Works in Seaport Towns. The first three clauses had been carried unanimously, but, as nothing had been said about quarantine, Mr. Smith, in common with several others, imagined that the vote did not apply to the fourth clause. The English delegates, especially at this late hour, were not in the least desirous of opening up the question of quarantine, and if Dr. Proust would concur in the opinion that the fourth clause had not been put to the meeting, the subject need not be further discussed.

Dr. Proust, however, did not agree to this. He was under the impression, on the contrary, that the fourth clause had been

adopted; but, if there were any objection to this clause, he was quite willing that the matter should be investigated. Dr. V. Vignard, formerly director of the sanitary service of the Lower Danube, rose and fully indorsed what Mr. Adolphe Smith had said. He had also voted for the first three clauses, which alone had been discussed, and not for the fourth, to which he was absolutely opposed. A conversation thereupon arose between Dr. Proust and Dr. Vignard, which continued till they were called to order, and each party asked to make a statement. Dr. Vignard consequently delivered an energetic speech. The resolution stated "that it was only when the ports presented a soil unsuitable for the penetration of morbid exotic germs that the last quarantine checks could be abolished;" but what criteria were they to show that the soil could not harbour germs? A port was never quite purified. People talked of the "rendering healthy" (the *assainissement*) of England as if it was something similar to the washing of a plate—an operation which, when once performed, was evident to all eyes. But there were English delegates present who could testify that this was not the case. In spite of the great works accomplished in England, much remained to be done, and even in London there were many plague spots. He complained that he did not know what was going on in the sanitary services of France, and required a large publicity and public control with regard to the quarantine observations imposed by the French port authorities. He had noted with pain and surprise a remark in Dr. Brouardel's opening speech, to the effect that the treason of one guardian of a lazaret had cost Spain in 1884–85 no less than 200,000 lives. What was this system which by the momentary neglect of one out of many thousand guardians could bring about the loss of 200,000 lives? He agreed with quarantine as defined by Fodéré in 1815. It meant a rope. The difficulty was to prove its utility or its inutility; for if we pointed to failure in one country, others would point to success in other countries. History, however, was against quarantine; for in the fifteenth century it had been properly and rigorously applied. In those days it was said that for a quarantine three things were necessary—money, force, and the hangman. A quarantine enforced, as in the past, by sentences of death, was logical; but as we were not prepared, and as it was absolutely unpractical, to return to these barbarous practices, it was illogical, vexatious, and useless to maintain the fiction of quarantine. It was not till the Government of England had officially proclaimed that quarantines were useless that real sanitary improvements were accomplished. The great fear entertained in England of cholera facilitated the execution of sanitary works. What was the use of asking municipalities to vote large sums for sanitary works if they were told at the same time that they would be protected by the imposition of quarantines which would cost them nothing?

Dr. Proust, in reply, protested that he had no desire to revive the old quarantine methods. They were willing to give every facility to

companies whose ships were well managed. As for publishing the details of what was done, that would be very uninteresting reading, but whenever anything of interest happened it was at once communicated to the Press. The term "quarantine" was subject to misinterpretation: the abolition of this word had been proposed at the Rome Conference. We need only take precautions against the cholera, the plague, and the yellow fever. These diseases came from such a distance that precautions were possible. First, all consuls in the different distant ports could telegraph information; then the journey took from fifteen to twenty days, which was in itself a period of observation; and, finally, the greater part of the ships had to pass through the Suez Canal, where timely information could be obtained, and, if necessary, the ships detained before they entered the Mediterranean. This detention was proposed at the Rome Conference, and approved by the twenty-two or twenty-three nationalities officially represented. England and India alone voted against the proposal. If a ship had a disinfecting stove on board, a good doctor, and no dangerous case had recently occurred, then they would give free pratique. But if there had been cases of cholera on board two or three days previously, then the ship should be detained. Practically, he had found on inquiry that such detention would have the effect of stopping four or five English ships for four or five days each year. There was a great difference between this and the quarantines described and denounced by Dr. Vignard. Besides, England had herself just sent the ship *Neva* into quarantine for sixteen days at Southampton. (This assertion greatly surprised the English delegation, who had certainly not heard of the circumstance.) Dr. Proust went on to give further explanation, which tended to reduce the meaning of the word "quarantine" to method of observation and of disinfection, very different from what is generally understood by the term. Dr. Treile approved of quarantines, and maintained that they had saved Algeria from cholera in 1884.

Mr. Adolphe Smith rose to explain that the point at issue was the actual wording of the resolution. Dr. Proust might attenuate the meaning of the word "quarantine" in a very satisfactory manner, but this would have no effect whatever with the outside public. Hundreds of newspapers would publish the text of the resolution, but would not know, or would not have space to mention, the explanations given in the Section. The point was not what Dr. Proust might mean, but what the resolution meant; and the resolution undoubtedly meant that quarantine might be imposed even in the most salubrious of ports, for there was no port in the world which could be described as absolutely incapable of harbouring imported germs of disease. Dr. Proust and several French delegates protested that they did not interpret the resolution in such a literal sense; but Mr. Smith, supported by the English delegates, persisted that this was the view the outside public, unenlightened by the discussions of the Section, would take of the matter, and that therefore he should be obliged to press the question to a division. Dr.

Proust now, however, offered to withdraw the word "quarantine," and put "restrictive measures" in its stead. This, when taken in connection with the general tone of the discussion, was considered satisfactory, and it leaves for future Congresses to discuss what restrictive measures may be imposed as a substitute for the old-fashioned quarantines. An amicable compromise being this effected, the Section adjourned without a division. The following is the text of the original resolution and the amendment proposed, and accepted by Dr. Proust and the entire Section:—"C'est seulement alors que les ports présentent un terrain réfractaire à la pénétration des germs morbides exotiques on pourra supprimer complètement les dernières entraves quarantenaires." Altered to "les dernières mesures restrictives."

On Friday morning the members of the International Congress of Hygiene went to the Exhibition and examined the sanitary apparatus displayed there. In the afternoon, in Section 5, M. Maignen read a lengthy paper on Water Filtration. He suggested, as a test, that water should be mixed with a known microbe, and a guinea-pig or rabbit inoculated with the water. Another rabbit should be inoculated with the same water after filtration. If the former died, and the other did not, this might be taken as a proof that the filter was good. Dr. Macé had made experiments with the germ of anthrax in this manner, and found it did not pass through the "filtre rapide." The filter was equally efficacious in preventing the passage of metallic poisons, copper, lead, &c., in solution. Some little discussion ensued, during which preference for the porcelain filter was expressed by some of the speakers, though it works much more slowly. M. Maignen was thanked for his interesting communication, and the president of the Section concluded by saying that filters were always excellent at first; the difficulty was to discover how long they would last.

Dr. Girard (Rheims) opened a discussion on the Supervision of Meat, urging that diseased meat should be cremated; that this was the best means of preventing its being surreptitiously sold. He further urged that the rules for supervision should be the same in rural as in town districts. This proposal was adopted by the Section.

After a few words about syrup of glucose, Dr. A. J. Martin's report on River Pollution was taken into consideration. There has been a great amount of legislation on this question in France. There were Ordinances issued in August 1669, in February 1773, in June 1777, and in July 1782. All these had the force of law, and all declared that refuse, filth, manure, &c., should not be thrown into rivers. These old laws were recently invoked (July 24th, 1875) by a Ministerial decision. Then there is the law of October 10th, 1810, on manufactories, &c. The law of April 15th, 1859, inflicts a fine of from 30 francs to 300 francs and imprisonment of from one to three months on those who throw into rivers chemicals that kill the fish. A Ministerial circular, dated July 31st, 1882, forbids pits or porous

wells, by which subsoil waters can be polluted with the residue of factories. Nevertheless, all these enactments require to be codified, and, above all, more strictly applied. Consequently, Dr. Martin concluded that industrial residue of a dangerous nature should not be allowed to flow into a river or an underground watercourse. This can only be allowed when the residue has been so treated as to deprive it of all toxic, putrid, dangerous, or any other sort of matter that can alter the natural quality of the river water. The purification of industrial waters or residue must be rendered compulsory, and executed according to approved methods. The purification by irrigation is the most perfect means of treating the waste water from mills, &c., containing organic matter. This must sometimes be preceded by chemical and mechanical processes, to render such waters fit for agricultural purposes. These conclusions were adopted, but a very lengthy discussion ensued as to who should be responsible for the application of such a law. If a manufacturer refused to purify his residue, should the State do the work for him and charge him with the cost? If so, what method would the State apply? Perhaps some antiquated expensive method—in a word, the State might blunder and put the manufacturer to unnecessary expense. As it was, many manufacturers had actually made money in seeking to prevent water pollution, for this had led to the discovery of advantageous methods of utilising waste. M. L. Faucher, civil engineer, member of the Central Council of Hygiene in the Department of the Nord, related that river pollution had produced typhoid epidemics in his district. Each manufacturer, however, denied that the waste was the cause, because they only partially polluted the rivers. It was as if one man had a pistol, another some powder, and a third a bullet, and each declared he could not possibly do any harm. Yet it was only necessary for the three to come together to be able to kill some one. This is exactly what happened in the river with the waste from factories, and now that it had been stopped in his district typhoid fever had been stamped out. It was ultimately decided that the authorities ought to carry out the necessary works if the manufacturers persistently refused to do so themselves.

In Section 4, on Saturday morning, Madame Tkatcheff read a most interesting and carefully prepared paper on the Condition of the Working Classes in Russia. Irrespective of Siberia and Poland, she said there were about 932,000 operatives employed in the mills and factories of Russia. The way a considerable proportion of these workers were recruited had a great influence on public health. Many of them were agriculturists, who, being unable to earn enough to live, came to the industrial centres and worked in factories from September to February. They had no homes in those industrial centres, but slept very often in the factory itself, in the midst of the machinery, or in a sort of dormitory provided for them just above the works, and separated from the works only by a rude wooden floor, through which all the bad odours passed. Here the workers lay down on wooden shelves. They slept in their clothes, and at best

had a little sacking. The shelves were placed one above the other, so that sometimes there was only a hundred cubic feet of space per person. All the inspectors appointed by Government to inquire into these questions had complained of the dirt, overcrowding, and the promiscuity, for men and women often slept in the same dormitory. The hours of work varied from twelve to fourteen, and the food was altogether insufficient. The clothing was also of the poorest description. It was rare that a man could afford to wear leather boots, but contented himself with wrapping his feet in paper and rags, and thrusting them in woollen shoes. Shirts were considered a vain luxury, and but for the sheep's skins, worn with the wool inside, the people would die of cold. This sort of life soon destroyed all sense of self-respect, and fearful immorality was the result. The migrations of villagers into towns for a short time each year had brought back syphilis to the villages, and there were some villages in Russia where every single inhabitant was syphilitic. In some departments 10 per cent. of the recruits were syphilitic. There was but one redeeming feature: the Russian, however poor, always insisted on having a bath. He would as soon go without his food as go without his weekly bath. There were no statistics to show what was the mortality of the Russian working-class population, but the general mortality was sufficiently significant; it was 17 per 1000 in Sweden, 24 per 1000 in France, and 36·8 per 1000 in Russia. Out of 1000 deaths, the proportion of infants under one year was 113 in Norway, 190 in England, 216 in France, and 313 in Russia. The mortality among adults was equally high in Russia, and, taking the deaths occurring at ages varying from thirty to sixty years, the comparison was as the figures 11 for Norway, 13 for France, and 19·4 for Russia. Up to the year 1882 children five years old worked in factories. These children were sometimes syphilitic, as well as the victims of alcoholism. There were no regulations to prevent the explosions of boilers, nothing to hinder accidents with machinery. Women had to suckle their babies in the passages of the factories; and as for benefit societies or anything of that description, it would be a mockery to speak of saving to people who are driven by starvation to put up with so fearful an existence. In the match trade 75 per cent. of the workers were children, and they employed white phosphorus. Yet there were men and women in Russia well acquainted with the progress accomplished in Europe, and some attempt hadbeen made to imitate the good example. In 1882 a law was enacted forbidding the employment of children under twelve years of age, and limiting their work, up to the age of fifteen, to eight hours—that is, four hours, then an interval of three hours' schooling, and then four hours' more work. The law also forbids the employment of children in thirty-six different and dangerous industries, and this is three more than is the rule in most European States. Another law enacted in 1885 forbids night-work for women and children in weaving and spinning mills, but this law is as yet only applied in three centres. There is also organised, under the Ministry of Finance, a system of factory

inspection. Russia for this purpose is divided into fifty-nine industrial departments; and as each head inspector receives 5000 roubles and the sub-inspectors 3000 roubles, it is anticipated that they will be able to render good service, and that it will not be easy to bribe them to neglect their duties. There is also a law to the effect that, where there are more than a hundred persons employed in a factory, medical attendance should be provided; but it is physically impossible to apply this law, for there are only 18,000 doctors in the whole of Russia. Consequently many factories have no medical attendant, and the lack of proper care in sickness is another cause of the high rate of mortality.

Madame Tkatcheff's paper, of which this is but a brief and incomplete summary, produced a deep effect. After a few questions had been put, Mr. Adolphe Smith rose, and urged the Section not to rest satisfied with congratulating Madame Tkatcheff. She had given them a graphic and appalling picture of widespread suffering and human degradation. It was no use holding Congresses if they did not exercise their undoubted influence to put an end to such abominations. He would suggest that the Russian delegation might prepare a report on the effect of the recent Russian legislation, and on the actual condition of the working classes in that country. This report could be presented to the London Congress, and followed by a resolution worded in the manner which the Russian delegates might think would have the best effect in Russia. Such a resolution, put to the entire London Congress, and adopted unanimously, as there was every reason to hope it would be, could not but have effect. There was no Government so deaf as not to hear the voice of a Congress representing the best elements of sanitary progress in modern civilisation. In any case, it was impossible to sit still and make no effort to remedy a state of affairs which was a disgrace to our common humanity. The use of International Congresses was precisely to bring international pressure to bear where there was a weak point in the armour with which civilisation clothed herself to war against disease and premature death. He therefore moved the following resolution:—"That this Section invites the Russian delegates to submit to the International Congress of Hygiene, in London, in 1891, a report on the results of the new laws for the protection of labour, and a resolution for the amelioration of the material condition of the working classes in Russia."

This speech and proposal were warmly cheered, and the resolution was unanimously carried.

Dr. Dargelos read a paper on a method for rendering felt hat manufactories less unwholesome. M. Fisher brought forward some proposals for disinfecting night soil on its passage to the sewers, and M. Maignen an invention for purifying sewer water and extracting therefrom the solid residue, the ammonia, &c. The Section, on the strength of these two papers, was asked to vote a resolution regretting that the proposed credit of 200,000 francs for experiments in this direction had been struck out of the French Budget. Mr. Smith

objected, on the ground that the French Budget did not concern an International Congress, but only the principle at stake, and he thought we should all agree that all the Governments, and not one single Government, should be more liberal in such matters. The utilisation of sewage was a problem that might necessitate expensive experiments, and the States of Europe and America should, by small subventions, encourage such experimental research. A resolution in this wider sense was thereupon unanimously adopted, and the Section adjourned.

On Friday afternoon some Sections met at two o'clock, but at four o'clock all the Sections met together in the grand amphitheatre for the final sitting. Dr. Brouardel, as President of the Congress, explained that the Sections had passed a number of resolutions, that the subjects to be discussed in each Section had been fully announced beforehand, and therefore each member of the Congress had enjoyed the opportunity either of supporting or combating any one of the proposals brought forward. Under these circumstances they might conclude that what the Sections had done had been well done, and now he would ask the Congress to approve by vote, and if possible without discussion, the decisions of the Sections. Dr. Martin then commenced to read upwards of fifty resolutions. Dr. Brouardel soon discovered that a large number of these resolutions dwelt exclusively with French questions, and therefore did not put them to the Congress, but referred them back to the French committee. Most of the other resolutions of a general character were confirmed by a show of hands, though now and then there were a few opposing votes, and often a great number of abstentions. The fact was that many of the subjects were entirely new to a large number of the members, who had not been able to attend more than one Section at a time. Still, it was too late for discussion, and many things were allowed to pass which will require revision. Many of the resolutions thus confirmed have already been given in describing the work of the Sections. To these I might add a resolution, very warmly applauded, demanding that an address be forwarded to M. de Freycinet, Minister of War, congratulating him on his recent measures on sanitation in the army. Other resolutions demanded—a permanent inquiry into the cause of excessive infant mortality, a stricter control over midwives, the teaching of hygiene in schools, the publication of methods of water analysis, the creation of bureaux of hygiene and municipal laboratories in all centres of population, new laws enabling municipalities to compel householders to adopt the town water-supply, the abolition of all laws preventing cremation, the encouragement of cremation on battle-fields, the better inspection of pharmacies, &c.

The reading of these resolutions having taken up considerable time, the concluding ceremony had to be proceeded with very promptly, and Dr. Brouardel spoke for only a few moments. He announced that the next Congress would be held in London during the first week of August 1891. The work of organisation had already commenced, and the subjects to be discussed would probably

be known in about six months' time. He thanked his colleagues from abroad for the excellent support they had given the Congress, and hoped the harmony which had prevailed during the week among the members of the Congress would continue to reign amongst the nations represented.

Dr. Roth, on behalf of the foreign delegates, wished to thank the President and the Organising Committee for all they had done.

Senator Dr. Pacchiotti, in an enthusiastic speech, reproved the President for qualifying him as a foreigner. "The President," he exclaimed, "salutes the foreigners, but there are none in France. We are all at home in France. Here we meet each other, we live close to each other, we learn to love each other, we talk on the same subjects, we pass the same resolutions; we are not foreigners, we are brothers."

Mr. Shirley Murphy, in the name of the English delegation, rose to thank the French organisers of the Congress for the admirable reception they had prepared. He hoped to demonstrate the gratitude felt by the care they would take in providing hospitable entertainment in London. The cause they had at heart merited the support of all civilised nations. He only regretted that London was not a beautiful city like Paris, and that London did not possess a Brouardel. Nevertheless, he cordially urged all present to accept the invitation and meet again in England, and therefore he did not say *adieu*, but *au revoir*.

Mr. Shirley Murphy was loudly cheered, and the Congress was declared closed amidst cries of "*à Londres!*"

Though the official work of the Congress was thus brought to an end, some two hundred members met again on the following Sunday morning, and, led by M. Bechmann, engineer-in-chief of Paris, visited the palatial sewers that run from the Place de la Madeleine to the Chatelet. In barges and in a sort of tramway they travelled through underground Paris. The sewers were illuminated by many lamps and also by electricity. The barges were supplied with cushioned seats, the ladies came in elegant toilettes, and, so that they should not soil their dresses, the steps down into the sewers were carpeted. As an engineering feat these palatial sewers, as they have been so justly described, are certainly most remarkable, and well worth a visit. From the Chatelet the members of the Congress were conveyed in comfortable brakes to the sewage farm of Gennevillier. At Clichy they stopped to see the pumping machines, which lift a third of the sewage and send it over the river in an iron pipe to Gennevillier, where it is used to irrigate 750 hectares of market gardens. The remainder will in course of time be sent to Archères and to Méry. In the meanwhile, two-thirds of the Paris sewage still falls into the Seine at Asnières, and the members of the Congress were able to witness how it fouls the waters of the river. They then went over the sewage farm, admired the vegetables, ate some of the fruit, and drank the beautiful clear water derived from the sewage of Paris. It contained, they were assured, a smaller

number of microbes than the best spring water, the Vannes water, supplied to the town of Paris. The Congress now proceeded to enjoy the excellent lunch provided by the town of Paris at a restaurant in the little village of Gennevillier. The toasts were preceded by speeches of a particularly earnest and hearty character. Dr. Martin, as president, proposed that a crown composed of flowers from the sewage farm of Gennevillier should be deposited by the Congress on the grave of M. Alfred Durand-Claye, the author of the scheme of which they had admired the result. He recalled that when, in 1878, Durand-Claye had visited Gennevillier, he had been mobbed by the inhabitants; now he was the hero of the place.

M. Emile Trélat, who could scarce control his emotion, drank to the memory of his old friend. Durand-Claye had been an eminent engineer, he had distinguished himself at college everywhere; but what made him really great was the whole-hearted manner with which he had given himself up to his work. Around them at Gennevillier, every hod of earth, every flower, breathed his name. A man with two hearts—a heart in France and a heart in his native Italy—Pacchiotti, had proposed that a monument should be raised in honour of Durand-Claye. As a Frenchman, he could but blush that a Frenchman had not first made the suggestion; but, while blushing, he gladly followed the example set by his excellent Italian friend. M. Deligny, municipal councillor, who had worked fifteen years with M. Durand-Claye, spoke a few affectionate words in his memory; and then the Mayor of Gennevillier, in the name of the inhabitants, desired to associate himself with the project, and promised a free grant of land for the monument.

M. Bechmann, M. Durand-Claye's successor, and Dr. Henriot, Mayor of Rheims, having spoken, there were loud cries for Dr. Bourneville, who in the National Assembly had carried the Bill which legalised these irrigation works, and whose admirable report on "l'Utilisation agricole des eaux d'égout de Paris" should be studied by all who are interested in the subject. Dr. Bourneville, in his speech, paid a handsome tribute to the various International Congresses of Hygiene. It was their debates, their decisions, which had strengthened his hands and enabled him to obtain the sanction of the French Assembly. M. Durand-Claye had collected a splendid library on sanitary questions, and proposed to leave it to the Museum of Hygiene which he hoped the municipality of Paris would soon be able to create, and he called upon M. Deligny to press the matter forward.

M. Bonkowsky Bey, chemist to his Majesty the Sultan, in a few well-turned sentences, proposed that the name of the ten agriculturists who first consented to utilise the Paris sewage water at Gennevillier should have their names engraved on Durand-Claye's monument. Delegates from Mexico, Brazil, and Egypt having also expressed their sympathy, Mr. Adolphe Smith was again selected as spokesman on behalf of England and America. In the name of these nations he desired to participate in the centenary celebrations of 1789, a date

to be ever associated with the spread throughout the world of those principles of freedom which were the basis of true scientific research and knowledge. As representing the most liberal nations of the civilised world, he hoped America and England would always remain united with France in their forward march. He claimed for these countries the full right to participate in the honours to be rendered to the memory of Durand-Claye. He challenged the French right to monopolise this memory. Durand-Claye was a glorious example of the international character of sanitary science. He had never paused at a frontier line, but studied hygiene with equal assiduity in England, Holland, Belgium, even in Germany, availing himself of all the good ideas he could find in all countries. That library which he had so generously left to the town would be found to be an international library; and Paris was an international town, and hygienists of all countries meant to avail themselves of Durand-Claye's experience, and, while inspiring themselves by his great works, claimed their right to contribute to the homage that would so justly be rendered to his memory. This speech was enthusiastically received. Dr. John H. Rauch, medical officer of health of Chicago, confirmed briefly in English the sentiments expressed, and promised to raise a subscription for the monument in America. Several hundred francs were at once collected among the guests, who, though they had started at nine in the morning, did not get back to Paris till five in the afternoon. Still the Congress was not quite over, for the next evening a hundred members, principally the foreign delegates, were entertained at a brilliant reception given in their honour at the Ministry of the Interior, by the Minister, M. Constant.

Thus at last was this most animated and successful Congress terminated. I have given a very imperfect, incomplete account of the proceedings, but perhaps have said enough to show the interest and importance of such Congresses. Several subjects, notably the ventilation and heating of houses, so originally and ably treated by M. Emile Trélat and M. Somasco, I must leave for a separate study, and will attempt to describe the theories enunciated when dealing with the exhibits on these questions. But for a full account of the Congress it is best to wait till the official report, which will constitute a large and handsome volume, is published. This will probably be done at an early date, and will be sent gratuitously to all the members of the Congress. Those who were not members will probably be able to obtain the report by applying to the Secretary-General of the Société de Médecine Publique et Hygiène Professionnelle, 28 Rue Serpente, Paris.

WELLCOME LIBRARY INSTITUTE

22503183845